OUT-OF-SCHOOL YOUTH IN MINDANAO, PHILIPPINES: A CASE STUDY SUPPORTING THE UPLOAD JOBS ENTREPRENEURSHIP-TRAINING PROGRAM

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ABSTRACT

The UPLOAD JOBS entrepreneurship-training program was implemented by the United States Agency for International Development to enable out-of-school youth (OSY, 18 – 24 years) entrepreneurship in Mindanao, Philippines. To effectively manage the program in this international context, this dissertation collected, assessed and contributed to a rare database of context- and entrepreneurship-specific information about OSY, respectively. First, a 'Youth Potential Entrepreneur' (YPE) questionnaire was developed to gather and report OSY demographics, entrepreneurship characteristics, and personality traits to help customize the program's design and implementation. Data collected from the YPE questionnaire informed that OSY are educated (i.e., high school diploma) and have potential for entrepreneurship (i.e., positive entrepreneurship motivations, aspirations and personality traits); however, represent necessity entrepreneurs that have minimal entrepreneurship knowledge and access to social, physical and financial resources to start a new business, respectively. Second, items measuring OSY autonomy, risk-taking propensity, and innovativeness, cited to characterize the 'successful' entrepreneur, proved effective as a measurement model to screen their entrepreneurship 'potential' for program entry to help manage resources and performance outcomes. Third, a 'Youth Population Survey' was developed to assess the program's screening and performance outcomes by measuring OSY's entrepreneurship perceptions, attitudes and activities. Data collected indicated that screening differentiated OSY's responses compared to those who were not screened, and that the program succeeded in fostering new entrepreneurs (i.e., business owners); however, fell short on fostering their positive entrepreneurship perceptions and attitudes. Finally, it was determined that OSY employment (including self-employment)

probabilities are significantly influenced by cultural (i.e., family business ownership) and psychological determinants (i.e., risk-taking), informing policy and programs that enabling OSY employment (including self-employment) in this region is complex and may go beyond basic skills and knowledge training that entrepreneurship-training programs provide. Findings suggest that OSY represent a valuable resource of entrepreneurship potential; however, existing measurement tools need to be adapted to OSY context to address the gap between the extant entrepreneurship, psychology and development literature, and the management of OSY and entrepreneurship training programs in developing countries.

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List of abbreviations

ADB:	Asian Development Bank
APS:	Adult Population Survey
ARMM:	Autonomous Regions of Muslim Mindanao
CA:	Capabilities Approach
EU:	European Union
G-7:	Group of Seven (the United States, Canada, France, Germany, Italy, Japan, and the United Kingdom)
GEM:	Global Entrepreneurship Monitor
GERA:	Global Entrepreneurship Research Association
HED:	Higher Education for Development
ILO:	International Labor Organization
ISIS:	Islamic State of Iraq and Syria
MDA:	Mindanao Development Authority
NREM:	Department of Natural Resources and Environmental Management, University of Hawai‘i at Mānoa
OECD:	Organization for Economic Development Co-operation and Development
OSY:	Out-of-School Youth
PhP:	Philippine Peso
PSED:	Panel Study of Entrepreneurial Dynamics
SCC:	Southern Christian College
SD:	Standard Deviation
TPB:	Theory of Planned Behavior
UHM:	University of Hawai‘i at Mānoa

UNDP:	United Nations Development Programme
UNSD:	United Nations Statistics Division
UPLOAD JOBS:	University Partnership Linking Out-of-School Youth (OSY) to Agri-Entrepreneurship and Development to promote Job Opportunities and Business Scale-Up
USAID:	United States Agency for International Development
USD:	United States Dollar
YPE:	Youth Potential Entrepreneur
YPS:	Youth Population Survey

CHAPTER 1. Introduction

In 2014, the United Nations Population Fund declared that the youth (15 – 24 years) population hit a record of 1.8 billion (UNFP2014). Youth represent a valuable resource with much potential to drive social, economic and political growth (ILO, 2015b). However, youth also make up 40% of the world's unemployed, suggesting that their value and potential have been mismanaged (ILO, 2015b). Youth unemployment is a particular concern in developing countries where two thirds of youth are not working, not studying, and/ or are engaged in the informal labor market (UNDP, 2014). Their high and often persistent unemployment is predominantly an outcome of their limited and unequal access to basic capital resources (i.e., health, education and a decent standard of living) that weak or missing institutions struggle to manage and effectively distribute (UNDP, 2014). As a result, international development agencies have allocated financial aid to mobilize economic resources that support youth (Burnside and Dollar, 2000; UNDP, 2004).

Initially promoted by the Millennium Development Goals established at the Millennium Summit of the United Nations in 2000 (UNDP, 2004), development agencies such as the International Labor Organization (ILO, 2015b), the United States Agency for International Development (USAID, 2015), and the World Bank (Wilson *et al*., 2009) have promoted entrepreneurship, defined in this dissertation as starting a new business or venture (Kelley *et al*., 2012), as a platform to foster youth into the formal labor market, create new jobs, and stimulate local economic growth. Development agencies have prioritized the implementation of entrepreneurship-training programs under the assumption that teaching and practicing entrepreneurship can increase individual entrepreneurial intentions (Bae *et al*., 2014), relevant skills (Lorz *et al*., 2010; Oosterbeek *et al*., 2010) and engagement in entrepreneurship (Hansemark, 1998; Rosa, 2006; Wilson *et al*., 2007; Bae *et al*., 2014; DeJaeghere and Baxter, 2014; Geldhof *et al*., 2014; Timan and Gangi, 2015). However, while entrepreneurship has achieved much attention in the policy and development arenas, youth research related to entrepreneurship and entrepreneurship-training program outcomes is nascent and often limited to youth of

higher education institutions in developed countries with advanced economies (Garravan and O'Cinneide, 1994; Gorman *et al*., 1997; Shane, 1997; Duval-Couetil *et al*., 2010; Duval-Couetil *et al*., 2013). International development agencies lack the information and tools to more effectively design, implement, and manage programs that support youth in marginalized regions of developing countries (Chigunta *et al*., 2005; Wilson *et al*., 2009; Awogbenle *et al*., 2010; DeJaeghere and Baxter, 2014).

1.1 Case Study

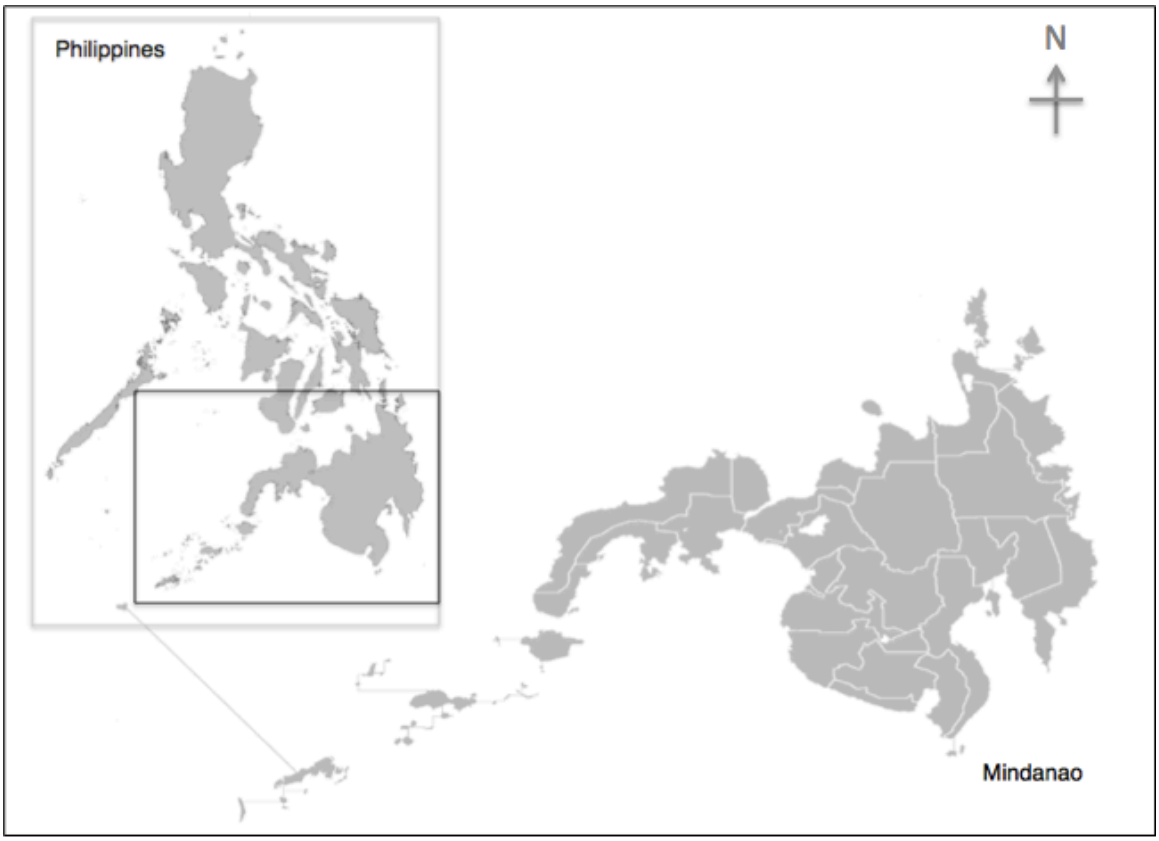
1.1.1 The UPLOAD JOBS program

This dissertation is based on a case study of an entrepreneurship-training program, the "University Partnership Linking OSY (Out-of-School Youth) to Agri-Entrepreneurship and Development to promote Job Opportunities and Business Scale-up (UPLOAD JOBS)" that was implemented in Mindanao, Philippines from 2012 – 2015. Out-of-school youth (OSY) were defined as youth between the ages of 18 – 24 years that were unemployed and not in school (HED, 2011). It was funded by the United States Agency for International Development (USAID) through the Higher Education and Development (HED) organization, and implemented by the University of Hawai'i at Mānoa's (UHM) Department of Natural Resources and Environment Management (NREM) as the leading institution in collaboration with its local counterpart, Southern Christian College (SCC) (HED, 2011).

Mindanao represents the southernmost island of the Philippines (Figure 1.1), consisting of indigenous people, small-scale farmers, landless workers and fishers (Bloom *et al*., 2012; MDA, 2015), with a rich production of palay (rice), corn, abaca, banana, coconut, coffee, mango, pineapple, sugarcane, cacao, oil palm, camote (sweet potato), cassava and rubber (MDA, 2015). Recognized as the agricultural breadbasket of the country (MDA, 2015), the focus of the program was to equip OSY in Mindanao, Philippines, with the necessary resources, knowledge, and skills to be able to identify and seize new business opportunities in their natural environment (UPLOAD JOBS, 2012). The program consisted of five courses (introduction to entrepreneurship, finance, marketing, business

plans and new ventures), interactive workshops, guest speakers, engaging field trips, and program-specific competitions that fostered and empowered OSY entrepreneurship (UPLOAD JOBS, 2012). Each training program was approximately nine days in length and was hosted in the municipalities of Midsayap and Esperanza in the Provinces of Cotabato and Sultan Kudarat, respectively. These two municipalities were selected based on the program's funding designation, SCC's existing involvement and relations with local barangays, and program security. The training programs (total of four) were held between the periods of January 2013 to May 2015.

Figure 1.1 Map of Mindanao, Philippines.



Source: Wikimedia Commons, the free media repository

Out-of-school Youth in Mindanao, Philippines

In the Philippines, youth comprise an estimated 20% of the total population and are three times more likely than their adult counterparts to be unemployed (ILO, 2015a). Despite international development program and policy (i.e., Philippines Development Plan

(2010), the Youth Entrepreneurship Act (2015) and the JobStart Philippines Act (2016)) efforts, one in four youth in the Philippines are unemployed and not pursuing further education or training (ADB, 2016). However, in Mindanao, OSY are particularly vulnerable to unemployment due to the region's limited and unequal access to basic capital resources (i.e., health, education, and decent standard of living) and weak or missing institutions (Co, 2004; Schiavo-Campo and Judd 2005; Evangelista, 2013; USAID, 2016) compared to the rest of the Philippines. Table 1.1 depicts the region's unequal access to basic capital resources based on their health (life expectancy at birth), education (access to education), and a standard of living (average income per household, poverty incidence) as compared to other regions of the country. Measurement indicators were selected based on the United Nations Development Program's (UNDP) components of the human development index (UNDP, 2015) and available data published by the Philippine Statistics Authority (psa.gov.ph). According to the UNDP, access to these basic capital resources informs a populations' progress of achieving human development (i.e., opportunity and well-being) (UNDP, 2015).

Table 1.1 Comparison of human development indicators of access to education (high school educational attainment), a decent standard of living (average income by family household), and health (life expectancy at birth) and poverty incidence, in select regions of the Philippines. Measurement indicators were selected based on the United Nations Development Program's components of the human development index (UNDP, 2015) and available data published by the Philippine Statistics Authority (psa.gov.ph).

	[1]*Minimum High School Diploma (%)*	[2]*Average income by family (In thousand pesos)*	[3]*Life expectancy at birth*		[4]*Poverty incidence among population (%)*
			Male	*Female*	
National Capital Region	56.7	425	68.8	75.6	6.5
Cagayan	42.6	237	68.3	73.3	21.5
Calabarzon	46.1	312	68.9	75.2	13.4
Bicol	28.6	187	67.6	72.6	39
Western Visayas	36.7	226	68	74.2	30.5
Central Visayas	34.2	239	68.9	73.9	30.5
Regions in Mindanao					
ARMM	20.1	139	61.9	62.9	59
Caraga	30.9	198	65.9	71.3	43.9
Soccksargen	30.5	188	67.4	72.3	44.5
Davao	34.4	247	67.1	71.9	26.7

Sources: [1]Philippine Statistics Authority, 2008 Functional Literacy, Education and Mass Media Survey; [2]Philippine Statistics Authority, 2015 Family Income and Expenditure Survey; [3]Philippine Statistics Authority, 2010-2015 Census-Based National, Regional and Provincial Population Projections; [4]Philippine Statistics Authority, 2015 Official Poverty Statistics

These conditions have fueled illegal markets, active conflict, and poverty in this geographically isolated region of the country (Co, 2004; Schiavo-Campo and Judd 2005; Evangelista, 2013; USAID, 2016). As a result, the majority of the population earns less than 1.25 USD/day (the United Nations Millennium Development Goals indicator of poverty (UNSD, 2008)) (HED, 2011; Bloom *et al*., 2012), the region consistently hosts at least 10 of the top poorest provinces in the country (Bloom *et al*., 2012; The Summit Express, 2016), and OSY represent a higher proportion of youth (11 – 12%) in Mindanao, compared to the other regions of the country (8 – 10%) (FLEMMS, 2013). Due to these persistent conditions, OSY are leaving their barangay (also known as

village) to find employment or an alternative source of income to support their families both regionally and internationally. Conversely, those who stay in the region are opting not to engage in the formal labor market due to their lack of skills, knowledge, and formal education required to be competitive in the already limited employment market (Vignoles, 2008; HED, 2011), making them prime targets for recruitment by armed groups, terrorists, or militia (Vignoles, 2008; Awogbenle and Iwuamadi, 2010). This is of particular concern in Cotabato and surrounding areas, where the Islamic State of Iraq and Syria (ISIS) are actively recruiting OSY and offering an immediate 20,000 Php (423.14 USD) for their commitment with promises of additional profitable returns (Hegina, 2015).

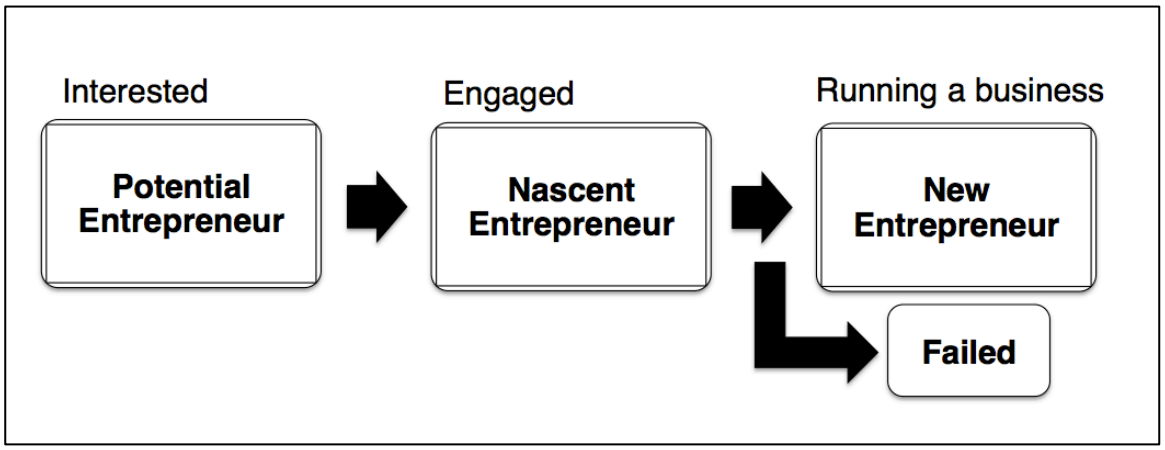
It is for these reasons that OSY represent a target and priority population for international development agencies implementing entrepreneurship-training programs in Mindanao, Philippines. Therefore, to effectively foster and engage OSY into entrepreneurship, training programs require context- and entrepreneurship-specific information about youth, respectively, to strategically customize their programs' design and management in Mindanao, Philippines.

1.2 Research framework: measuring youth entrepreneurship

To date, the Global Entrepreneurship Monitor (GEM) represents the largest and most comprehensive research effort on what we know about entrepreneurs, entrepreneurship, and why some populations are more entrepreneurial than others. Figure 1.2 illustrates the GEM's entrepreneurship 'process' that has been organized into three inter-dependent phases of measurement: 1) potential entrepreneurs, who are interested in entrepreneurship and believe they have what it takes to start a new business (Krueger and Brazeal, 1994); 2) nascent entrepreneurs, who are in the first three months of starting a new business; and 3) new entrepreneurs, who are former nascent entrepreneurs with a new business that has been running for at least three months, but less than three and a half years (or those who have failed at pursuing their new venture) (Kelley *et al*., 2012). The GEM measures

individual entrepreneurship attributes and activities at each phase through extensive surveys and interviews that are administered by national experts (Kelley *et al*., 2012).

Figure 1.2. A simplified illustration of the Global Entrepreneurship Monitor's (GEM) entrepreneurship 'process' organized into three inclusive and interdependent phases of measurement: the potential entrepreneur, the nascent entrepreneur, and the new entrepreneur (or those who have failed at pursuing their new venture) (Kelley *et al*., 2012).



Source: Kelley et al., 2012 (Figure 2, pg. 5)

To support the UPLOAD JOBS program design and management, this dissertation applied the GEM's research framework of the entrepreneurship 'process' to the context of OSY in Mindanao, Philippines, addressing four specific research questions:

1. Who are the OSY interested in entrepreneurship?
2. Can we measure their entrepreneurship potential to support program management?
3. How can we measure and evaluate program outcomes?
4. What determinants influence OSY employment (including self-employment) probabilities that participated in training?

By addressing these four research questions, this dissertation measured, assessed, and contributed to a rare database of context- and entrepreneurship-specific information about OSY in Mindanao, Philippines. Results helped to bridge the gap between youth research

in developing countries and the extant entrepreneurship, psychology and development literature to provide recommendations that support and advance the management of OSY and entrepreneurship-training programs in Mindanao, Philippines.

CHAPTER 2. Measuring youth entrepreneurship attributes and potential: developing a questionnaire to customize the UPLOAD JOBS program design and management

2.1 Introduction

Little is still known about youth entrepreneurs that could inform the design and management of entrepreneurship-training programs in marginalized contexts of developing countries (Chigunta *et al*., 2005; Awogbenle and Iwuamadi, 2010; Langevang *et al*., 2012; Cho and Honorati, 2014; DeJaeghere and Baxter, 2014; Gwija *et al*., 2014). A burgeoning literature on entrepreneurship in developing countries (Bruton *et al*., 2013), with indigenous communities (Peredo and Chrisman, 2006), and in the context of conflict (Bruck *et al*., 2011, 2013), has only recently come to light. On the other hand, the majority of what we know about entrepreneurs and entrepreneurship stems predominantly from developed economies such as the United States (U.S.) and Europe (Shane, 1997; Hisrich *et al*., 2007). For example, the Panel Study of Entrepreneurship Dynamics (PSED), founded by the University of Michigan in 1996 and the precursor to the GEM, represents one of the most recognized national and longitudinal studies of the entrepreneur (PSED, 2007). Developed in the U.S., the PSED I (1998 – 2000) and II (2005 – 2006) consists of extensive questionnaires and interviews that have been administered in different regions and countries such as Latin America (Argentina, Brazil, and Mexico), Canada, the U.S., Western Europe (Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom), Japan, India and China to better understand how and why individuals start businesses in different countries (PSED, 2007; Reynolds and Curtin, 2008). Moreover, the GEM's data collection is dependent on 'National Teams' composed of independent researchers and staff who must fund their own initiatives (average cost of 123,250 USD per National team per year), limiting the GEM's geographical reach to developed countries (i.e., the G-7, OECD, and EU) and some countries in Asia and Latin America (GERA, 2015). As it relates to youth entrepreneurship, empirical studies are often limited to tertiary or post-secondary institutions where access to funds, research personnel and resources are more readily available and attainable (Béchard and Grégoire, 2005; Fayolle, 2006).

Prioritizing adults, the GEM has only published one global report on youth entrepreneurship, 'Future Potential: A GEM Perspective on Youth Entrepreneurship', in July of 2015 (Schøtt *et al*., 2015). A notable gap persists in measuring, collecting and assessing entrepreneurship-specific information about youth in developing countries (Chigunta *et al*., 2005; Geldhof *et al*., 2014) that could support entrepreneurship-training program design, implementation and management (Wilson *et al*., 2009; Awogbenle and Iwuamadi, 2010; Cho and Honorati, 2014; DeJaeghere and Baxter, 2014).

Developing an instrument that collects, measures, and informs a baseline of context- and entrepreneurship-specific information about program participants (i.e., OSY), could provide great value to program management. First, it could be used as a tool to guide and customize program design and implementation in regions of inherent social, economic and institutional differences (Burnside and Dollar, 2000). Furthermore, programs could use it for the purpose of identifying individuals with entrepreneurship 'potential' to support program performance outcomes. To be specific, research and education programs have promoted the use of standardized tools to measure and screen for target populations in order to prioritize resources and program performance outcomes (Miles *et al*., 2004; Moodley *et al*., 2006; Locker *et al*., 2007; Marchant *et al*., 2009; Radecki *et al*., 2011). In the U.S., the Scholastic Assessment Test (SAT) has been administered as a nationwide standardized screening tool to manage college resources and commencement outcomes (Buchman *et al*., 2010; The College Board, 2015). It tests high school students' scholastic capacities to select them for college entry (The College Board, 2015). Therefore, a measurement tool that screens and selects youth for program entry would be of particular value to program management in developing countries where youth often outnumber program resources and capacities

2.2 Theoretical background

2.2.1 Measuring entrepreneurship attributes

Entrepreneurship characteristics

Entrepreneurship characteristics have been of particular interest for research defining the entrepreneur (Hornaday and Aboud, 1971; Gartner, 1989; Solomon and Winslow, 1988; Koh,

1996; Shane, 1997; Alstete, 2002; Gurol and Atsan, 2006). The PSED I and II collect and report population demographics and entrepreneurship characteristics (i.e., individual intentions, motivations, aspirations, social, environmental and cultural factors, and access to capital resources) to evaluate populations' potential for entrepreneurship (PSED, 2007). The GEM has applied the PSED research framework of measuring individual entrepreneurship characteristics to inform the different phases of the entrepreneurship 'process' (Reynolds and Curtin, 2008). Its global report on youth entrepreneurship (Schøtt *et al*., 2015) has identified youth human (individual's knowledge, skills and experience), social (individual's valued and relational network with others), and financial (individual's direct monetary assets) capital resources as important entrepreneurship characteristics that influence youth entrepreneurship engagement (Schøtt *et al*., 2015). Based on the results of this report, youth demographics and entrepreneurship characteristics differ compared to adults suggesting the significance and need to collect information about youth entrepreneurs and entrepreneurship, respectively (Schøtt *et al*., 2015).

Entrepreneurship personality traits

The personality trait approach is one of the 'classical' or early approaches to entrepreneurship research and thus most extensively applied and explored (Baum *et al*., 2014). Rooted in the field of psychology, numerous personality traits have been applied to characterize and define the entrepreneur (Baum *et al*., 2014). To be specific, McClelland (1961) was one of the first to characterize the entrepreneur based on the personality traits of need to achieve (a desire to get feedback, plan and set goals, have strong personal initiative, strong commitment to the venture) and internal locus of control (a belief in personal goals rather than those of others). Since then, various empirical studies in different countries such as Finland (Littunen, 2000), Hong Kong (Koh, 1996), China (Taormina and Lao, 2007), Sweden (Hansemark, 2003) and Germany (Caliendo and Kritikos, 2008), have replicated the 'classical' trait approach to measure and characterize the entrepreneur (Baum *et al*., 2014). Results from these studies identified differences in populations' personality traits that were case and country-specific. Personality traits have only recently been applied and measured for youth, mainly of students in formal institutional settings and controlled environments where large sample sizes are more readily available and attainable for this demographic (Littunen, 2000; Mueller and Thomas, 2001;

Hansemark, 2003; Ahmed *et al*., 2010). Additional research is required on this nascent topic of youth (Geldhof *et al*., 2014) beyond students of such contexts.

2.2.2 Measuring entrepreneurship potential

Research in developed countries has advanced in empirical studies that measure, assess, and inform personality traits of the entrepreneur (McClelland, 1961; Chell, 1991, 2008; Littunen, 2000; Mueller and Thomas, 2001; Hansemark, 2003; Rauch and Frese, 2007; Baum *et al*., 2014). These studies have led to our current knowledge and understanding of key personality traits that characterize and drive the 'successful' entrepreneur (Levenson, 1973; McClelland, 1987; Chell *et al*., 1991; Cooper and Gimeno-Gascon, 1992; Crant, 1996; Rauch and Frese, 2000; Zhao *et al*., 2010; Baum *et al*., 2014) and differentiate entrepreneurs from non-entrepreneurs (Engle *et al*., 1997; Davidsson and Honig, 2003; Schoon and Duckworth, 2012). These studies have fueled empirical measurements of populations' entrepreneurship potential based on personality traits cited in literature to characterize the 'successful' entrepreneur (Hull *et al*., 1980). For example, Borland (1975) studied the personality traits of autonomy and need for achievement to characterize University of Texas students' entrepreneurship potential that wanted to become new business owners. Crant (1996) explored the application of personality traits to differentiate University of Notre Dame students' entrepreneurship potential that had intentions of starting a new business. Mueller and Thomas (2001) used a large data set (N = 1,800) of third and fourth year students at 25 universities in nine countries to explore and compare students' entrepreneurship potential based on their autonomy and innovativeness. Similar to empirical studies measuring populations' entrepreneurship personality traits, populations' entrepreneurship potential were found to be case and context-specific across different countries (Borland, 1975; Crant, 1996; Mueller and Thomas, 2001). Despite the recent academic interest on the topic of youth and entrepreneurship in developing countries (Awogbenle and Iwuamadi, 2010; Langevang *et al*., 2012; DeJaeghere and Baxter, 2014; Geldhof *et al*., 2014; Gwija *et al*., 2014), no study has focused on measuring OSY entrepreneurship potential (based on personality traits) in a developing country context.

2.3 Methods

2.3.1 Identifying items for measurement in the questionnaire

Measuring OSY demographics and entrepreneurship characteristics

Items from the PSED II's 'Identification of Entrepreneurs Questionnaire' (2005) were extracted. Table 2.1 lists the specific items that were extracted to measure individual demographics and entrepreneurship characteristics such as interests in starting a business, business experience, and reasons for starting a new in the questionnaire (PSED, 2007).

Table 2.1 Items extracted from the PSED II 'Identification of Entrepreneurs Questionnaire' (2005) to measure demographics and entrepreneurship characteristics of out-of-school youth (OSY) in Mindanao, Philippines.

Demographics	
(1a)	Sex of Respondent
(2a)	Are you the head of this household?
(3a)	Are you currently employed full time, employed part time, retired, or not employed?
(4a)	What was the last grade in school you completed?
(5a)	What is your age?
(6a)	Total household income
Entrepreneurship Characteristics	
(1b)	Over the past twelve months have you done anything to help start a new business, such as looking for equipment or a location, organizing a start-up team, working on a business plan, beginning to save money, or any other activity that would help launch a business?
(2b)	You are, alone or with others, currently trying to start a new business, including any self-employment or selling any goods or services to others. Does this apply to you?
(3b)	What are the one or two main opportunities that prompted you to start this new business?
(4b)	Why do you want to start this business?

Source: http://www.psed.isr.umich.edu/psed/data

In addition, based on the GEM's global report on youth that identified differences in youth and adult entrepreneurship characteristics (Schøtt *et al*., 2015), items measuring youth human, social, and financial capital resources were included for measurement.

Measuring OSY entrepreneurship personality traits

A literature review across the fields of entrepreneurship and psychology was conducted to identify select entrepreneurship personality traits for measurement. Based on this literature review, empirical studies measuring populations' entrepreneurship personality traits often measure a range of one to six personality traits per study. For example, Stewart *et al*. (1998) measured need for achievement, risk-taking propensity, and innovativeness of entrepreneurs. In another study by Gurol and Atsan (2006), need for achievement, autonomy, risk-taking propensity, innovativeness, tolerance of ambiguity, and self-confidence were used to measure the entrepreneurship profile of Turkish university students (Gurol and Atsan, 2006). Since personality traits had yet to be measured for OSY in Mindanao, personality traits were selected based on their frequency and recognition (or statistical significance) in the entrepreneurship literature for defining and characterizing the entrepreneur, and their ability to motivate an individual with entrepreneurship intentions into action (Brockhaus, 1982; Rauch and Frese, 2007; Caliendo and Kritikos, 2008). As a result, risk-taking propensity, need for achievement, autonomy, and innovativeness were selected for measurement (Ahmed, 1985; Birley and Westhead, 1994; Gartner, 1990; Johnson, 1990; Low and MacMillan, 1988; Mueller and Thomas, 2001; Ruvio and Shoham, 2011). Table 2.2 lists the four personality traits, their definitions, and additional publication sources used in this research.

Table 2.2 List of the four personality traits (risk-taking propensity, need for achievement, autonomy and innovativeness) selected for out-of-school youth measurement in Mindanao, Philippines, including their definitions and additional publication sources.

Personality Trait	*Definition*	*Sources*
Risk-Taking Propensity	Personal willingness to assume risk (commit to and accept), associated with being self-employed.	Kogan and Wallach, 1964; Teoh and Foo, 1997; Entrialgo *et al*., 2000; Mueller and Thomas, 2000; Cromie, 2000
Need for Achievement	Hardworking, determined, shows initiative, and strives in a competitive environment in the pursuit of excellence.	McClelland, 1961, Littunen, 2000; Utsch and Rauch, 2000; Entrialgo *et al*., 2000; Stewart *et al*., 2003
Autonomy	Belief that one has complete control of their personal welfare, takes full responsibility of their successes and failures, and is not dependent on others.	Rotter, 1966; Gilad, 1982; Riipinen, 1994; Koh, 1996; Engle *et al*., 1997; Hansemark, 1998; Utsch and Rauch, 2000; Leone and Burns, 2000;
Innovativeness	Personal preference for seeking and pursuing novel activity is creative and resourceful.	Zacharakis, 1997; Schumpeter, 1965; Entrialgo *et al*., 2000; Utsch and Rauch, 2000 Stewart *et al*., 2003;

2.3.2 Developing the questionnaire for youth context

Given the international and developing context of OSY in Mindanao, measurement items had to account for OSY social and economic context and comprehension and program-specific limitations related to questionnaire administration (i.e., language barriers, limited staff, resources, funding and participant response fatigue) (Warwick, 1993). As a result, all questionnaire responses were modified to represent categorical choice items to limit the confusion when translating and evaluating OSY survey responses, and to support the facilitation of questionnaire administration in this cross-cultural context.

Demographics

Seven items measured OSY demographics: gender (male/ female), age (continuous), head of household (No/ Yes), education (below High School/ High School Diploma achieved), employment (Unemployed/ (Self-) employed), religion (Other/ Christian), and income (continuous). The measure of income was modified from its original form "total household income" in the PSED II questionnaire (Table 2.1, 6a) to measure OSY "individual annual income", a continuous response-variable that was now OSY-specific. Based on the GEM's global report on youth (Schøtt *et al*., 2015): 1) personal use of loans (i.e., have you applied for a loan in the past three years) that measured OSY's additional (aside from individual annual incomes) access to financial capital resources (Orser *et al*., 2006); and 2) former participation in development training (limited to the past year) that measured OSY's human capital resources and access to development training (Burnside and Dollar, 2000; Awogbenle and Iwuamadi, 2010), were included in the questionnaire. Responses for these items represented categorical choice responses of 'No' and 'Yes'. In addition, an open-ended item asked OSY to provide their residential community and years of residence. This measure was included based on existing research in the international entrepreneurship literature regarding natives (Dahl and Sorenson, 2009) versus immigrants (Constant and Zimmerman, 2004) as successful entrepreneurs.

Entrepreneurship characteristics

Items from the PSED II questionnaire related to individual business experience (Table 2.1, 1b) and interests in starting a business (2b) were modified from their more open-ended response to represent categorical choice responses of 'No' or 'Yes' in the questionnaire. Next, based on the GEM's global report on youth (Schøtt *et al*., 2015), the PSED II's question item of "What are the one or two main opportunities that prompted you to start this new business?" (Table 2.1, 3b) was expanded into three items measuring youth social capital resources based on categorical choice responses of 'No' or 'Yes': 1) individual family entrepreneurship experience (i.e., family owns or manages a business); 2) individual family farm ownership (i.e., family owns or manages a farm); and 3) personal entrepreneurship networks (i.e., knows an entrepreneur personally) (Djankov *et al*., 2005; Duval-Couetil *et al*., 2010). In addition, "Why do you want to start this business?" (Table 2.1, 4b) was modified to represent a categorical choice response of 'Other' and 'I have always aspired to/ I see it as an opportunity' to identify opportunistic entrepreneurs amongst the population (Block and Wagner, 2010). According to development research, what

pulls (opportunity) individuals towards entrepreneurship as a valued choice, versus pushes (necessity) them into it based on needs, can make a big difference in one's persistence and success in their entrepreneurship pursuit, beyond resources and/ or policy support (Block and Wagner, 2010; DeJaeghere and Baxter, 2014).

Entrepreneurship personality traits

Items to measure the four personality traits were selected from existing standardized assessment tools identified in literature to measure and assess respective personality traits (i.e., the Rotter's (1966) original 29-item I-E scale (Thomas and Mueller, 2000), the Jackson Personality Inventory (Jackson, 1994; Thomas and Mueller, 2000; Zhao *et al*., 2010), the Risk Attitudes Inventory (Calvert, 1993), the Acquired Needs Self-Assessment (McClelland, 1961), and the entrepreneurial self-assessment scale (Asia, 1981; Koh, 1996)). Items to measure OSY personality traits were selected based on significant empirical findings in literature, access to standardized assessment tools, and stakeholder discussion and feedback regarding applicability to study objectives, OSY context and ability to comprehend measurement items. Stakeholders included four professionals and researchers in the field of entrepreneurship, natural resource management, and international development in the U.S. and Europe, and two program staff from the Philippines (minimum Bachelor of Science or Arts degree from the region of Mindanao). Based on this selection process and consideration of OSY participant response fatigue, four items were selected to measure each personality trait. Harvey *et al*. 1985 confirmed that four items could be used to test the validity of a latent construct. Cook *et al*. 1981 found that internal consistency and reliability could be determined with as few as three items for a latent construct. Next, personality items were measured using a five-point Likert scale (1 Strongly disagree to Strongly agree 5), a common practice by empirical studies measuring individual personality traits related to entrepreneurship (Koh, 1996; Entrialgo *et al*., 2000; Leone and Burns, 2000; Mueller and Thomas, 2001; Gurol and Atsan, 2006; Ahmed *et al*., 2010). In addition, five-point Likert scales are preferred in questionnaire research (Cook *et al*., 1981; Jamieson, 2004) and for survey administration purposes in cross-cultural contexts (Dawes, 2008). Therefore, personality items that were not already measured via a five-point Likert scale were modified as such. For example, items extracted from the Jackson Personality Inventory were modified from their true/false choice-responses to represent a five-point Likert scale of choice responses.

2.3.3 Finalizing the questionnaire

To assist with finalizing the questionnaire, a total of 19 professionals and researchers at the post-secondary institutional level in the field of entrepreneurship and business, and active business owners in the U.S. and Mindanao, Philippines, were asked to complete the questionnaire. Professionals and researchers were informed that items in the questionnaire were modified to support item measurement and OSY context and comprehension in Mindanao, Philippines. They were asked to provide feedback on any unclear and vague items, and the questionnaire's suitability to measure and characterize attributes of OSY potential entrepreneurs. Based on their feedback, no major adjustments or revisions were required.

Pilot questionnaire

A pilot questionnaire was administered in December 2012 to 101 OSY in the municipalities of Alamada, Carmen, Libungan, Midsayap, Aleosan, and Pigcawayan in Cotabato Province. Based on comments and feedback from this pilot administration, OSY and local program counterparts found the questionnaire to be too long. OSY felt rushed trying to complete the questionnaire in the allotted time (45 minutes to an hour). They also expressed difficulty in understanding some of the questionnaire items measuring the four personality traits.

Revising the questionnaire

To address OSY's feedback and support a more conducive response rate where OSY did not feel rushed, items measuring youth personality traits were reduced from four to three five-point Likert (1 Strongly disagree to 5 Strongly agree) items per personality trait. This reduced respondent fatigue while still maintaining statistical authenticity for each measured personality trait (Cook *et al*., 1981; Harvey *et al*., 1985). In order to identify measurement items for removal, local stakeholder (the same individuals previously mentioned) feedback was prioritized. Items that did not reflect the local OSY context or were difficult to comprehend by OSY were removed. In addition, preliminary results from the first administration of the questionnaire indicated that the personality trait of need for achievement was prevalent across the sample population. Based on feedback from local program staff that OSY are predominantly hard working and determined given the marginalized social and economic context that they reside, the personality trait of need for achievement might not be a critical personality trait to measure and

inform about OSY in this context. The personality trait was removed from the questionnaire to support a more meaningful set of personality traits for measurement. The verbiage of the remaining personality items was reviewed. Table 2.3 lists the specific modifications made to the pilot questionnaire to support OSY comprehension of the personality items in the final questionnaire. Italic font indicates specific suggestions made by local program staff that included three females that had a Bachelor of Science or Arts degree from the region of Mindanao. The finalized questionnaire was then administered from September 2013 to August 2014.

Table 2.3 Specific modifications made to personality items from the pilot questionnaire administered in December 2012. Modifications were based on feedback from the youth, local program counterparts, and data collected from the pilot questionnaire. Italic font indicates specific suggestions made by local program counterparts for changes. A finalized questionnaire was administered from September 2013 to August 2014.

	Pilot Questionnaire	*Final Questionnaire*
Autonomy	I usually work hard to improve on my past performance	I work hard to improve on my past performance
	I prefer to be my own boss	I prefer to be my own boss
	Making money is primarily a matter of good fortune	*Local program staff and counterparts suggested removing this question as OSY are constantly trying to earn money to survive and may not understand this question*
	I believe that I have control over the future of my life	I have control over the future of my life
Need for Achievement	I enjoy competition and winning	Removed – OSY responses all had agree- strongly agree suggesting minimal sample differentiation. *Local program staff and counterparts suggested this is not a critical personality trait for measurement*
	For my job, I perform above and beyond expectations, there is always something more to be done or improved	
	If I'm told something is impossible to do, I often can't resist seeing if it's true. I don't mind failing if I learn something in that process	
	Any criticism is good criticism	
Innovativeness	I prefer to step outside of my comfort zone to explore and try new things	I prefer to step outside of my comfort zone to explore and try new things
	I have the ability to anticipate and troubleshoot problems	People get excited by my ideas
	Change is a precursor to development and growth	I am constantly looking for the next challenge in my life
	I always like to have the latest information and technology	*Local program staff and counterparts suggested we remove this question as OSY do not often have the money to have the latest technology nor access to information*

Table 2.3 (Continued) Specific modifications made to personality items from the pilot questionnaire administered in December 2012.

Risk-Taking Propensity	If forced to choose between them, I would rather "be safe than sorry"	I often do whatever it takes to win
	I have confidence in my ability to recover from my mistakes, no matter how big.	I am a risk-taker.
	When facing a decision with uncertain consequences, the potential benefits (not losses) are my greatest concern.	When facing a challenging decision, I am more focused on what I will GAIN than lose
	I would choose a twenty-thousand-pesos bonus over a four-thousand-pesos annual raise, even if I had about a one-in-three chance of winning the bonus	*Local program staff and counterparts suggested we remove this as OSY do not have a good concept of money and may not understand the question*

The Youth Potential Entrepreneur (YPE) questionnaire

The questionnaire was titled the 'Youth Potential Entrepreneur' to distinguish its particular focus on measuring and collecting information about OSY potential entrepreneurs prior to program implementation. To support OSY comprehension and acknowledge the region's cultural and ethnic diversity, the questionnaire was translated into the dialects of Ilongo, Cebuano, Maguindanaon, and Tagalog. It consisted of 28 measurement items: 11 items measuring demographics, eight items measuring entrepreneurship characteristics, and nine Likert items measuring personality traits (four items for each personality trait). Table 2.4 provides a description of the 28 items and the units used for measurement.

Table 2.4 Description of the questionnaire measures and units used for analysis to inform the UPLOAD JOBS program about out-of-school youth (OSY) demographics, entrepreneurship characteristics and personality traits prior to program implementation. The questionnaire was administered in seven select municipalities in the provinces of Cotabato and Sultan Kudarat in Mindanao, Philippines (2013 – 2014).

Measure	*Description and Unit*
Demographics	
Gender	Categorical, 0 is Male and 1 is Female
Age	Continuous
Income	Continuous, individual income per year (at time of survey) *(in Philippines Pesos/ PhP)*
Education	Categorical, the highest level of educational attainment, 0 is below High School and 1 is High School Diploma achieved.
Employment	Categorical, individual employment status. 0 if Unemployed and 1 if Self-Employed or Employed
Community that you reside	Name of community
Migrant Status	Continuous, number of years resided in current community
Head of Household	Categorical, whether or not the respondent is the head of household and has dependents. 0 is No and 1 is Yes
Religion	Categorical, 0 is Other and 1 is Christian
Access to Training	Categorical, whether or not the respondent has participated in a developmental training program in the past year, 0 is No and 1 is Yes.
Loans	Categorical, whether or not the respondent has an existing loan, 0 is No and 1 is Yes. *(Formal and/ or informal)*
Entrepreneurship Resource Characteristics	
My family owns their own business	Categorical, family business ownership experience that an individual is directly exposed to, 0 is No and 1 is Yes.
My family owns their own farm	Categorical, family farm, contextualized to agricultural context, that an individual is directly exposed to, 0 is No and 1 is Yes.
Entrepreneurship Plans	Categorical, whether or not the respondent has plans to start a new business within the next year, 0 is No and 1 is Yes.
Entrepreneurship Experience	Categorical, whether or not the respondent has business ownership or management experience (of the past year), 0 is No and 1 is Yes

Table 2.4 (Continued) Description of the questionnaire measures and units used for analysis to inform the UPLOAD JOBS program about out-of-school youth (OSY) demographics, entrepreneurship characteristics and personality traits prior to program implementation.

Entrepreneurship Network	Categorical, whether or not the respondent knows at least one business entrepreneur in their social network, 0 is No and 1 is Yes
Entrepreneurship Aspiration	Categorical, whether or not the respondent has entrepreneurial aspirations in their individual development, 0 is No and 1 is Yes
Entrepreneurship Interest	Categorical, individual interest in starting a business, 0 is No and 1 is Yes.
Entrepreneurship Intention	Categorical, reason for interest in starting a business, 0 is Other and 1 is 'I have always aspired to/ I see it as an opportunity'
Personality Traits of Entrepreneurship	
Autonomy	Three different Likert items measuring individual belief that they have complete control of their personal welfare, take full responsibility of their successes and failures, and are not dependent on others; each with five choice items of 1 as Strongly Disagree, 2 as Disagree, 3 as Neutral, 4 as Agree and 5 as Strongly Agree
Innovativeness:	Three different Likert items measuring individual preference for seeking and pursuing novel activity and is creative and resourceful; each with five choice items of 1 as Strongly Disagree, 2 as Disagree, 3 as Neutral, 4 as Agree and 5 as Strongly Agree
Risk-Taking Propensity:	Three different Likert items measuring individual willingness to assume risk (commit to and accept) associated with being self-employed; each with five choice items of 1 as Strongly Disagree, 2 as Disagree, 3 as Neutral, 4 as Agree and 5 as Strongly Agree

2.3.4 Administering the YPE questionnaire

Four to six weeks prior to the implementation of the UPLOAD JOBS program, local program staff contacted barangay (also known as village) leaders in the municipalities of Alamada, Carmen, Libungan, Midsayap, Aleosan, and Pigcawayan in Cotabato Province and Esperanza in Sultan Kudarat Province. The program selected these seven municipalities based on SCC's existing involvement and relations with local barangays within each municipality. Barangay

leaders were informed about the program and its objective of fostering OSY entrepreneurs. With their permission and support, a formal announcement was held at a centrally located spot in the barangay (i.e., public school, barangay center) two weeks prior to program implementation. At this announcement, individuals of participating barangays were informed about the upcoming program and respective dates of implementation. After the program announcement, the YPE questionnaire was administered.

The questionnaire was administered to OSY potential entrepreneurs in Mindanao, Philippines. In this research, OSY potential entrepreneurs were defined as any OSY between the ages of 18 – 24 years that saw opportunities in their area and believed they had the capabilities to start a new business venture. Participation in the questionnaire was mandatory for any OSY potential entrepreneur interested in participating in the UPLOAD JOBS program. The questionnaire was administered in a group setting by seven members of the program team. A group setting was preferred due to the large number of OSY expected to participate and the limited time, resources and funding to support one-on-one questionnaire administrations. A program research staff and a translator facilitated the administration, while five program staff were available for support. Prior to administration, OSY were informed about the content of the questionnaire, procedures of the administration, and how to record their responses. Each questionnaire item and its respective responses were read aloud in English followed by the local dialect, and then OSY were given time to respond to that specific item. OSY were instructed not to proceed to the next item until everyone had responded. Administration was approximately one hour to an hour and a half in length.

2.3.5 Screening youth entrepreneurship potential

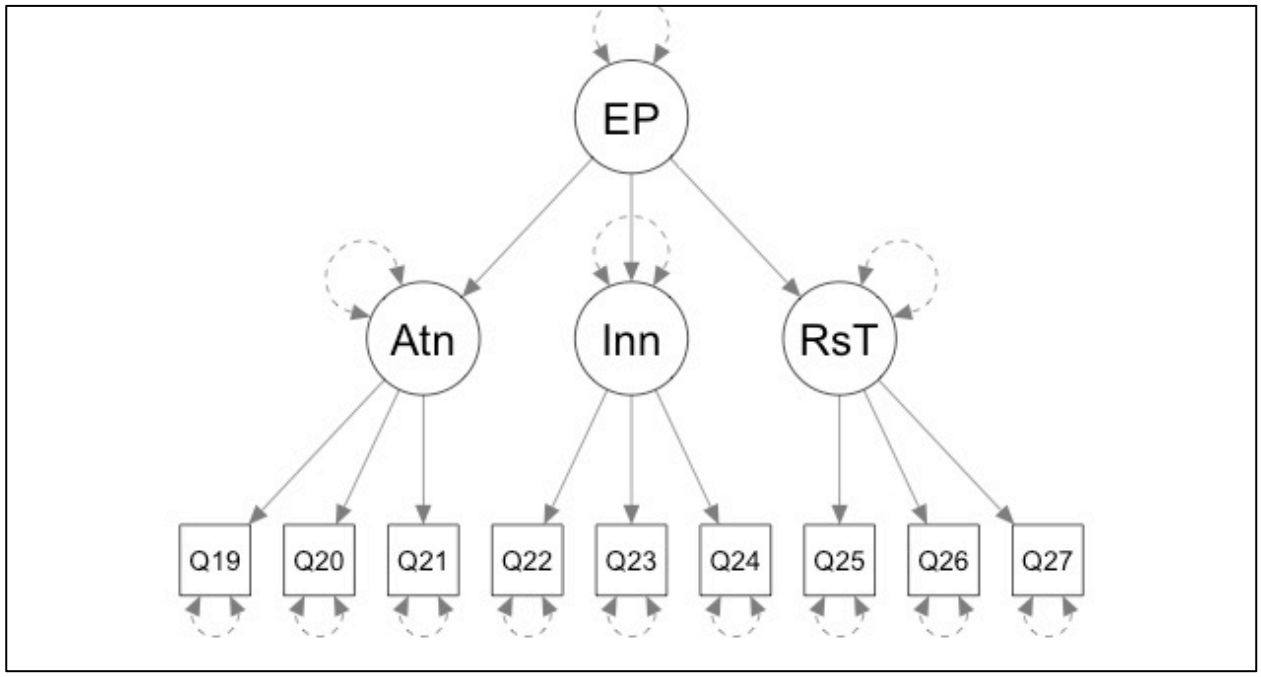
The UPLOAD JOBS program applied the YPE questionnaire as a screening tool to select OSY potential entrepreneurs for program entry. To be specific, OSY self-reported responses to items measuring their autonomy, innovativeness, and risk-taking propensity (nine items) were used as criteria to measure and screen their entrepreneurship potential for program entry. Their self-reported responses were converted to a score from 1 (Strongly disagree) to 5 (Strongly agree) (Pollnac and Crawford, 2000) and then aggregated to generate an entrepreneurship potential

score per respondent (out of 100). Scores were ranked from lowest to highest. The top scores were selected for program entry based on a total program capacity of 180 (60 OSY per program).

Testing a measurement model of youth entrepreneurship potential

A confirmatory factor analysis (CFA) was selected in this research to test the effectiveness of the screening's measurement model of OSY entrepreneurship potential in Mindanao, Philippines. A CFA was selected because it allows the research to test whether a set of items defines a construct (Schumaker and Lomax, 2010). It allows for the analysis of multiple regression relationships as they relate to one overarching theme, while also accounting for the model's measurement error (Schumaker and Lomax, 2010). It tests hypothesized measurement models established from theoretical and empirical foundations in literature using latent constructs (Doll *et al*., 1994; Schreiber *et al*., 2006; Schumaker and Lomax, 2010). Latent constructs are not directly but instead indirectly observed or measured (Schumaker and Lomax, 2010). Results from a CFA inform three major model aspects for examination: (1) overall goodness of fit; (2) the presence or absence of localized areas of strain in the solution (i.e., specific points of ill-fit); and (3) the statistical significance of the model's parameter estimates (Hoyle, 2000). Based on the program's screening criteria, it was hypothesized that OSY entrepreneurship potential could be measured by a second-order latent construct defined by three first-order latent personality constructs of autonomy (Atn), innovativeness (Inn), and risk-taking propensity (RsT) that were each were measured by three observed variables in the questionnaire. The hypothesized measurement model of OSY entrepreneurship potential is shown in Figure 2.1.

Figure 2.1 The hypothesized Confirmatory Factor Analysis (CFA) of a measurement model of Out-of-School Youth (OSY) in Mindanao, Philippines composed of a second-order latent construct of entrepreneurship potential (EP) defined by three first-order latent constructs of autonomy (Atn), innovativeness (Inn) and risk-taking propensity (RsT).



Notes: Observed variables are illustrated by squares while circles illustrate the latent constructs. The second-order latent construct of entrepreneurship potential (EP) (illustrated as circles) was defined (indicated by solid arrow lines) by three first-order latent constructs (illustrated by a circle) that were each defined (indicated by solid arrow lines) by four observed variables: autonomy (Atn) squares Q19 – 21, innovativeness (Inn) squares Q22 – 24, and risk-taking propensity (RsT) squares Q25 – 27, respectively. Dotted lines indicate the measurement error accounted for of each measured construct or variable in the model.

2.3.6 Data analysis

Demographics and entrepreneurship attributes

Data collected from the YPE questionnaire were input and analyzed using SPSS Statistical Software Version 23. Relevant descriptive statistics of OSY demographics and entrepreneurship characteristics were used to inform the UPLOAD JOBS program about their target populations' potential entrepreneurs prior to implementation. In order to evaluate OSY's positive reflection of entrepreneurship personality traits, a one-sample *t*-test was applied to determine if OSY's mean

self-reported responses to personality items of autonomy, innovativeness, and risk-taking propensity measured on a five point likert scale (1 Strongly disagree to 5 Strongly agree) were significantly equal to or greater than 4 Agree.

Entrepreneurship potential

To test the effectiveness of the screening's measurement model of OSY entrepreneurship potential, R Studio Software was used to conduct a confirmatory factor analysis (Rosseel, 2012). Absolute fit indices were used to assess and confirm the model's fit: chi-squared test, the root mean square error of approximation or RMSEA (<0.08), standardized root mean square residual or SRMR (<0.08), comparative fit index or CFI (>0.90), and Tucker-Lewis index or TLI (>0.95)) (Boomsma, 2000; Schumaker and Lomax, 2010). A Cronbach's alpha was assessed for each personality trait to evaluate its internal reliability. A Cronbach's alpha greater than 0.7 was considered an adequate scale (George and Mallery, 2003; Tavakol and Dennick 2011). The Composite Reliability (CR) and the Average Variance Extracted (AVE) were used to assess each personality traits' convergent validity, high correlation amongst measurement items (Hair, 2010). An acceptable convergent validity was considered as an AVE greater than or equal to 0.5, and the CR larger than the AVE (Hair, 2010). The Maximum Shared Squared Variance (MSV) and Average Shared Squared Variance (ASV) were determined to assess each personality traits' discriminant validity, that items were not highly correlated with items of other constructs (Hair, 2010). If the AVE was higher than the MSV and the ASV, than items within a construct had good discriminant validity (Hair, 2010).

2.4 Results

2.4.1 OSY Potential Entrepreneurs in Mindanao, Philippines

A total of 285 questionnaires were considered for analyses and program consideration. Tables 2.5 – 2.7 summarize the results of OSY potential entrepreneur (N = 285) demographics, entrepreneurship characteristics, and personality traits that participated in the questionnaire in Mindanao, Philippines.

Demographics

Table 2.5 represents the socio-economic profiles of OSY potential entrepreneurs (N=285). OSY had an average age of 21 years. According to the Philippines Statistics Authority, females represent 24% of the total OSY population in the Philippines (PSA, 2013). In this sample, 42.5% of respondents represented females suggesting an over-representation of females in this analysis. Approximately 93.7% of OSY indicated completing a high school education supporting the country's higher educational attainment amongst its youth across the country (ILO, 2009). Moreover, 38.4% of the sample indicated being (self-) employed. When asked to elaborate on their length of employment (including self-employment), the majority of OSY stated that they had held this employment status for less than a year. These demographics support the program's target population of OSY: youth (18 – 24 years) that are not currently enrolled in school, have not completed college or any post-secondary education, and are unemployed (or have unstable employment).

OSY self-reported annual incomes averaged 1.49 USD/day, above the United Nations Millennium Development Goals indicator of 1.25 USD/day (UNSD, 2008). Only 11% of OSY self-reported having taken out a loan in the past 3 years. Further clarification from local counterparts indicated that the majority of these loans, if not all of them, were informal either from a family member, friend or loan shark (informal financiers that offer loans at extremely high interest rates). Regarding OSY household demographics, the average family size was about 6 individuals, higher than the national average of 4.6 individuals per family (PSA, 2010). Approximately 16.8% of OSY represented the head of household. The low number of OSY (under 20%) who were head of household represented a concern for OSY program commitment and autonomy regarding decision-making. To be specific, in this case study context, OSY often reside at home where their parents who are the head of household, often rely on OSY for daily household activities. Therefore, program managers were informed to shorten the length of training. In addition, the staff was told to invite OSY for training two weeks in advance so that they could organize their household schedules accordingly. Next, approximately 80.5% of the sample population indicated having lived in their current barangay for more than 10 years, a particular advantage to the program whose underlying objective was to catalyze and support

local endogenous growth. OSY in this region had access to developmental training programs where 31.4% OSY indicated former training participation in the past year.

Table 2.5 Socio-economic profiles of out-of-school youth (OSY) potential entrepreneurs (N = 285) that completed the YPE questionnaire in Mindanao, Philippines between September 2013 and August 2014.

Demographics	*Frequency (Percent)*	*Mean (Avg.)*
Gender, female	42.5%	
Age (years)		21
Education, high school diploma	93.7%	
Religion, Christian	88.4%	
(Self-) employed	38.4%	
Head of household	16.8%	
Family size (no. of people)		6
Resides in their village for over 10 years	80.5%	
Individual annual income		23,643.49 PhP* (545.15 USD)
Has applied for a loan in the past three years	11%	
Participated in a government funded developmental training program in the past year	31.4%	

*Note: *0.023057 Average rate Php/USD for 2013 – 2014 (Source: http://www.usforex.com)*

Entrepreneurship characteristics

OSY self-reported responses of their entrepreneurship characteristics indicated positive entrepreneurship aspirations, interests and expectations in Mindanao, Philippines (Table 2.6). To be specific, 94% of OSY aspired to be an entrepreneur, over 95% indicated an interest in starting a business, and 89.4% self-reported that they were expecting to start a business within the next year. On the other hand, less than 20% of OSY self-reported having owned or managed a business in the past 12 months. As a result, the UPLOAD JOBS program was informed to customize to a more beginner-level audience. The program focused on introducing the significant topics of entrepreneurship (i.e., business planning, marketing, finance, production, and business expansion), how to prepare and present a business plan, and individual empowerment. Only 42.1% expressed an interest in starting a business in relation to the pursuit of a specific business opportunity. When OSY elaborated on the 'Other' reasons for starting a

business, their responses were predominantly for reasons of necessity (i.e., no other source of income generation or employment and/ or need an additional source of income to support the family or relatives). These findings confirmed the need to distinguish "necessity entrepreneurship" from "opportunity-based entrepreneurship" (Rosa, 2006; Langevang *et al*., 2012) as different drivers for OSY starting a new business in Mindanao, Philippines.

While OSY may lack personal experience in entrepreneurship, the majority of OSY had some form of social capital related to entrepreneurship. To be specific, 72.3% of OSY knew at least one entrepreneur personally, 18.2% were part of a family that owned their own business, and 33.8% resided on a family owned farm. This type of personal exposure to entrepreneurship enables a direct source of communication, information, support and mentorship or role models, in addition, direct access to physical capital resources that could support potential entrepreneurs' new business activity (Reynolds *et al*., 2005; Athayde, 2009; Dimitrov, 2012; Geldhof *et al*., 2014). The presence of this type of personal network and access to resources presented an additional advantage to programs like the UPLOAD JOBS that strive to enable OSY entrepreneurship in Mindanao, Philippines.

Table 2.6 Frequency statistics of out-of-school youth (OSY) (N = 285) entrepreneurship resource characteristics that completed the YPE questionnaire between September 2013 and August 2014 in Mindanao, Philippines.

Entrepreneurship Characteristics	*Frequency (Percent)*
Aspires to be an entrepreneur	94%
Interested in starting a business	98.6%
Interested in starting a business because it is an opportunity	42.1%
Expected to start a business within the next year	89.4%
In the past 12 months have owned or managed a business	19.4%
Knows at least one entrepreneur personally	72.3%
Family owns their own business	18.2%
Family owns their own farm	33.8%

Personality traits

Table 2.7 illustrates results of a one-sample *t*-test applied to determine if OSY's mean self-reported responses to personality items of autonomy, innovativeness, and risk-taking propensity

on a five-point likert scale (1 Strongly disagree to 5 Strongly agree) were equal to or greater than 4 Agree. Results are organized by personality trait, questionnaire item and SPSS outputs (mean, standard deviation, *t*-value, degrees of freedom, and significance level).

Table 2.7 Mean, standard deviation, *t*-statistics (mean ≥ 4.0), degrees of freedom and significance level of OSY (N = 285) personality traits measured in the YPE questionnaire from September 2013 to August 2014. Respondents were asked about their perceived level of agreement for each five-point Likert item (1 Strongly disagree to 5 Strongly agree) given statements measuring their autonomy, innovativeness, and risk-taking propensity.

Personality trait	*Questionnaire/ Likert Item*	*Mean*	*Standard Deviation*	*t*	*df*
Autonomy					
Q19	I work hard to improve on my past performance	4.48	0.700	11.51*	284
Q20	I prefer to be my own boss	4.07	0.990	1.196	284
Q21	I have control over the future of my life	4.45	0.885	8.501*	284
Innovativeness					
Q22	I prefer to step outside of my comfort zone to explore and try new things	4.34	0.759	7.491*	284
Q23	People get excited by my ideas	3.98	0.729	-0.569	284
Q24	I am constantly looking for the next challenge in my life	4.40	0.723	9.417*	284
Risk-Taking Propensity					
Q25	I am a risk-taker.	4.11	0.871	2.107*	284
Q26	I often do whatever it takes to win	4.37	0.811	7.747*	284
Q27	When facing a challenging decision, I am more focused on what I will GAIN than lose	4.19	0.886	3.542*	284
$*p<0.05$					

For the personality trait of autonomy, results of the *t*-tests suggested that OSY's mean self-reported responses were significantly equal to or greater than 4 Agree for questionnaire items "I work hard to improve on my past performance", $t(df = 284) = 11.51$, $p<0.05$, and "I have control over the future of my life", $t(df = 284) = 8.501$, $p<0.05$. Results suggested that OSY possess the personality trait of autonomy based on selected measurement items (Q19 and Q21). On the other

hand, the questionnaire item "I prefer to be my own boss", $t(df = 284) = 1.196$, $p>0.05$, was determined not to be significant.

For the personality trait of innovativeness, results of the *t*-tests suggested that OSY's mean self-reported responses were significantly equal to or greater than 4 Agree for the questionnaire items "I prefer to step outside of my comfort zone to explore and try new things", $t(df = 284) = 7.491$, $p<0.05$, and "I am constantly looking for the next challenge in my life", $t(df = 284) = 9.417$, $p<0.05$, respectively. Results suggested that OSY possess the personality trait of innovativeness based on measurement item Q22 and Q24. On the other hand, OSY's mean self-reported response to the questionnaire item, "People get excited by my ideas" (Q23), was not found to be significantly equal to or greater than 4 Agree, $t(df = 284) = -0.569$, $p>0.05$.

For the personality trait of risk-taking propensity, results of the *t*-tests suggested that OSY's mean self-reported responses were all significantly equal to or greater than 4 Agree for questionnaire items "I am a risk-taker", $t(df = 284) = 2.107$, $p<0.05$, "I often do whatever it takes to win", $t(df = 284) = 7.747$, $p<0.05$, and "When facing a challenging decision, I am more focused on what I will GAIN than lose", $t(df = 284) = 3.542$, $p<0.05$. Results suggested that OSY possess the personality trait of risk-taking propensity based on selected measurement items (Q25 – 27).

2.4.2 Screening OSY entrepreneurship potential to support program management

Screening youth for program entry

Two weeks prior to the implementation of the UPLOAD JOBS program, data collected from the YPE questionnaire was used to screen OSY entrepreneurship potential based on an aggregated score (out of 100) of their measured personality traits of autonomy, innovativeness, and risk-taking propensity (nine items) (*Section 2.3.5*). A total of 285 OSY participated in the UPLOAD JOBS program screening. OSY scored a mean of 85%, with a minimum of 41% and maximum of 100%. Scores were ranked from lowest to highest. A total of 180 OSY with the top ranking scores (range of 67 – 100%) were selected for program entry.

Testing the effectiveness of the screening's measurement model

The goodness-of-fit indices (Chi-square, RMSEA, SRMR, CFI, TLI) of the screening's measurement model are summarized in Table 2.8. Based on the criteria of good fit indices (*Section 2.3.6*), the measurement model had an acceptable data to model fit ($x^2 = 31.464$, $p>0.05$, RMSEA = 0.033, SRMR of 0.037, CFI of 0.98, and a TLI of 0.97).

Table 2.8 Goodness-of-fit indices (Chi-square, RMSEA, SRMR, CFI, TLI) of the OSY entrepreneurship potential measurement model used for UPLOAD JOBS program screening in Mindanao, Philippines. Data were collected from the YPE questionnaire administered between September 2013 and August 2014.

Model	*N*	*Chi-sq (p value)*	*RMSEA (p value)*	*SRMR*	*CFI*	*TLI*
Entrepreneurship potential	285	31.464 (0.141)	0.033 (0.811)	0.037	0.98	0.97

Table 2.9 summarizes the internal reliability and validity of each personality construct of the measurement model. The Cronbach's alpha and CR values of the three personality constructs were below the threshold of 0.7 indicating poor reliability. Risk-taking propensity represented the highest internal reliability of 0.681 and CR of 0.691. All three constructs scored an AVE below the threshold of 0.5 suggesting poor convergent validity. Furthermore, AVE's for all three constructs were below the MSV and the ASV values, suggesting poor discriminant validity for each construct.

Table 2.9 Construct reliability and validity (convergent and discriminant) of each personality trait in the measurement model of OSY entrepreneurship potential in Mindanao, Philippines. Data were collected from the YPE questionnaire administered between September 2013 and August 2014.

Personality trait (construct)	*Cronbach's alpha (α)*	*Composite Reliability (CR)*	*Average Variance Extracted (AVE)*	*Maximum Shared Squared Variance (MSV)*	*Average Shared Squared Variance (ASV)*
Autonomy	0.54	0.553	0.293	0.805	0.586
Innovativeness	0.457	0.545	0.22	0.805	0.709
Risk-Taking Propensity	0.681	0.691	0.421	0.613	0.490

Table 2.10 provides a detailed summary of the standardized parameter estimates and *t*-values of the measurement model. For the latent variables, all factors had significant (*t*-values) structural coefficients. Results supported latent personality constructs as measurable components of OSY entrepreneurship potential in Mindanao, Philippines. R-square reliability values of the model's measurement items were low (less than 50%) and error variances for each measurement item were high (minimum 0.5), confirming results determined in Table 2.9. Innovativeness indicated a structural coefficient greater than 1, and error variances across measurement items were high ranging from 0.741 – 0.832. Due to factor loadings greater than 1 and high error variances, the R-square of innovativeness was undetermined.

Table 2.10 Standardized parameter estimates and *t*-values of the measurement model of OSY entrepreneurship potential in Mindanao, Philippines. NA = undetermined.

Observed Variables				*Latent Variables (Personality traits)*			
Item	*Factor Loading*	*R-Square (Reliability)*	*Error Variance*	*Factor*	*Std. Structure Coefficient*	*R-Square (Reliability)*	*Error Variance*
Q19	0.501*	0.251	0.749	Autonomy	0.833*	0.694	0.306
Q20	0.507	0.257					
	(5.305)		0.743				
Q21	0.611	0.373					
	(5.726)		0.627				
Q22	0.484*	0.234	0.766	Innovativeness	1.077 (4.552)	NA	____
Q23	0.410	0.168					
	(4.851)		0.832				
Q24	0.509	0.259					
	(5.540)		0.741				
Q25	0.707*	0.500		Risk-Taking	0.728 (5.046)	0.529	0.471
			0.5	Propensity			
Q26	0.589	0.347					
	(7.434)		0.653				
Q27	0.645	0.416					
	(7.801)		0.584				

*Note: *indicates a parameter fixed at 1.0 in the original solution.*
t-values for item factor loadings and factor structural coefficients are indicated in parentheses.

2.5 Discussion

In an attempt to synthesize and complement existing theoretical and empirical work in this inter-disciplinary context, this research discussed the development and adaptation of a questionnaire to inform the UPLOAD JOBS program design and management in Mindanao, Philippines. It was determined that existing entrepreneurship assessment tools and measurement items applied in western empirical literature are not directly transferable to OSY in Mindanao, Philippines. Rather, they must be adapted to account for OSY comprehension, context, response rate, and diversity of dialects. Future researchers are encouraged to build on and refine existing methods and reach out to stakeholders that are knowledgeable of the measurement topics and reside in the local area and region for support in this process.

Data collected from the finalized YPE questionnaire informed a socio-economic, entrepreneurship characteristic and personality profile of OSY potential entrepreneurs interested

in participating in the UPLOAD JOBS program. Specifically, that OSY were educated (up to a high school diploma), unemployed with minimal incomes, and resided at home with their parents. They represented a motivated population that were interested in entrepreneurship and had access to entrepreneurship-related social capital, but required beginner-level entrepreneurship training and skills development. Personality traits of autonomy, innovativeness, and risk-taking propensity were significant amongst the OSY population, suggesting that OSY have positive psychological entrepreneurship potential but that their limited and unequal access to basic capital resources might be the major barrier to their entrepreneurship engagement and development. OSY were predominantly interested in starting a new business out of necessity (need to generate incomes). Implementation of entrepreneurship-training programs is imperative to mobilize resources that support and enable OSY entrepreneurship; however, programs need to foster an opportunistic culture and perspective of entrepreneurship to effectively and sustainably engage OSY entrepreneurship beyond program resources. Future studies should investigate the notable gap between theoretical entrepreneurship intentions and the necessity of OSY to generate incomes in Mindanao, Philippines. In addition, expand measurement items to enhance the estimation of results through improved specification (error in variables). For example, family farm ownership may be expanded to measure or investigate whether or not household farms produced products for sale or to support an agribusiness. Profiles of OSY potential entrepreneurs were used to inform and customize the UPLOAD JOBS program design prior to implementation.

Personality items from the YPE questionnaire were introduced as screening criteria to identify and select OSY with 'superior' (i.e., highest scores) entrepreneurship potential from the broader population for program entry. This research used a confirmatory factor analysis to test the program's measurement model of OSY entrepreneurship potential. Based on goodness-of-fit indices, results confirmed that the specified measurement model of OSY entrepreneurship potential in Mindanao, Philippines is plausible. However, poor reliability and validity of personality constructs suggested that measurement items may represent a localized area of 'ill-fit' in the model (Hoyle, 2000) that requires additional research and investigation prior to future replications. According to Hoyle (2000), it is common for the measurement portion of CFA models to require additional revisions compared to the structural components. For example, Doll

et al. (1994), Wang and Ahmed (2004), and Salehi *et al*. (2015) determined that despite acceptable goodness-of-fit indices, additional revisions were required to improve measurement model reliability and validity. Generally speaking, this is because there are usually more things that can go wrong in the measurement model than in the structural model (Hoyle, 2000).

2.5.1 Limitations

This research introduced three personality traits that were each measured by a minimum of three items for OSY measurement in Mindanao, Philippines, based on this research's selection process and to support consistent approaches of measurement of each personality trait. Future studies are encouraged to collect, measure and contribute to more empirical datasets of OSY entrepreneurship personality traits, not limited to three items for each personality trait, to support and expand empirical comparisons and additional OSY-specific references in Mindanao, Philippines, respectively. Due to limited resources and time available to revise and administer the questionnaire to OSY prior to program implementation, the YPE questionnaire was revised only one time. Where given the international differences between researchers and the OSY, revisions prioritized a qualitative approach that focused on OSY and local counterpart feedback in Mindanao, Philippines. CFA results should always be interpreted with caution since goodness of fit indices are relative rather than absolute (Doll *et al*., 1994; Hoyle, 2000). Inadequate reliability and validity of personality constructs confound the interpretation of results (i.e., acceptable goodness-of-fit) in this research. Additional revisions to measurement items are encouraged (quantitative and qualitative) to strengthen the measurement of OSY entrepreneurship potential to support youth research and program management in Mindanao, Philippines. The UPLOAD JOBS program used the measurement model to identify OSY with higher entrepreneurship 'potential' from the broader population for program entry. Alternatively, programs may use the measurement model to identify OSY with lower entrepreneurship 'potential' to support specific populations that require more specific training. Nevertheless, the measurement model was introduced to provide programs, whose targeted populations outnumber program capacities, with criteria to manage their resources and support program performance outcomes.

2.6 Conclusion

Existing entrepreneurship assessment tools and measurement items applied in western empirical literature are not directly transferable to OSY in Mindanao, Philippines. Rather, adapting existing measurement items to OSY context and comprehension is imperative to ensure effective measurement and analyses of OSY entrepreneurship-specific information in developing countries. Results from this research provided the UPLOAD JOBS program with a 28-item questionnaire that informed program design and management; in addition, contributed to an empirical reference (or dataset) of OSY potential entrepreneurs' demographics, entrepreneurship characteristics and personality traits in Mindanao, Philippines. Data collected from the YPE questionnaire identified that OSY were interested in entrepreneurship and have psychological entrepreneurship 'potential', but are necessity entrepreneurs with limited access to capital resources to support a new business. A test of the program's screening measurement model confirmed that personality traits are plausible components to measure OSY entrepreneurship 'potential' in Mindanao, Philippines; however, additional research is required to strengthen the reliability of measurement items and support measurement model comparisons.

CHAPTER 3. Measuring youth entrepreneurship attitudes, perceptions and activities to evaluate UPLOAD JOBS program outcomes

3.1 Introduction

Entrepreneurship-training programs have been promoted by international development agencies to help address youth unemployment under the assumption that fostering entrepreneurship can increase individual skills, positive attitude, and perceptions towards entrepreneurship (Bandura, 1986; Gorman *et al*., 1997; Duval-Couetil, 2013; Lorz *et al*., 2013; Gwija *et al*., 2014). Entrepreneurship in this research is defined as starting a new business or venture (Kelley *et al*., 2012). Based on this assumption, studies from the U.S. and Europe have evaluated outcomes of entrepreneurship-training programs, measuring individual entrepreneurship attitudes, intentions and activities post-intervention (Béchard and Grégoire, 2005; Fayolle, 2006). Results from these studies confirm that programs have a positive outcome on participant entrepreneurship intentions and behaviors (Hansemark, 1998; Liao and Gartner, 2007; Wilson *et al*., 2007; Martin *et al*., 2013). However, findings from these studies are predominantly limited to participants of tertiary or post-secondary institutions from developed countries with advanced economies (Béchard and Grégoire, 2005; Fayolle, 2006). There is a lack of empirical studies that measure program outcomes in developing countries where the decision to pursue and engage in entrepreneurship is more complex (Chigunta *et al*., 2005; Langevang *et al*., 2012; Cho and Honorati, 2014). Entrepreneurship-training programs would benefit from information related to youth entrepreneurship perceptions, attitudes, and activities to enhance program design, management and performance outcomes (Béchard and Grégoire, 2005; Duval-Couetil *et al*., 2013; Cho and Honorati, 2014). To address this limitation, this research discussed the adaptation of a survey that was used to evaluate the UPLOAD JOBS program outcomes by measuring OSY entrepreneurship attitudes, perceptions and activities.

3.2 Theoretical background

3.2.1 The Global Entrepreneurship Monitor's Adult Population Survey

One of the surveys administered by the Global Entrepreneurship Monitor is the 'Adult Population Survey' (APS) (2003). The APS measures nascent and new entrepreneurs' perception, attitudes and activities of entrepreneurship to better understand why some populations are more entrepreneurial than others (Kelley *et al*., 2012). Rooted in Azjen's Theory of Planned Behavior (TPB) (1988, 1991) and supported by the extant entrepreneurship literature, a population that is 'supportive' of entrepreneurship, in other words has a positive attitude and perception that entrepreneurship is both desirable and feasible, increases a population's entrepreneurship activities (Azjen, 1991; Krueger and Casrud, 1993; Krueger and Brazeal, 1994; Bird, 1988; Boyd and Vozikis, 1994; Mueller and Thomas, 2001). Ajzen's TPB links individual attitude and perception to behavioral outcomes under the assumption that one's positive attitude and perception toward a specific behavioral outcome valued either positively or negatively, will influence the likelihood of an individual engaging in that outcome (Azjen, 1991). The TPB has been applied in a variety of other social, behavioral and psychological fields such as leisure studies (Azjen and Driver, 1992a,b), medicine (Giles and Cairns, 1995), and natural resource management (Lynne *et al*., 1995; Lynne and Rola, 1988; Karppinen, 2005) to better understand individual decision-making and behavioral outcomes. To date, data collection and analyses of the GEM's APS is predominantly limited to developed countries (i.e., the G-7, OECD, and EU) and some countries in Asia and Latin America (Kelley *et al*., 2012; GERA, 2015). The APS has not been administered to OSY to measure their entrepreneurship perceptions, attitudes and activities or to evaluate entrepreneurship-training program outcomes in a developing country.

3.3 Evaluating the UPLOAD JOBS program outcomes

3.3.1 Program screening

Two weeks prior to the implementation of the UPLOAD JOBS program, a 'Youth Potential Entrepreneur' (YPE) questionnaire was administered to all interested program participants. Data

collected from the questionnaire was used to screen OSY entrepreneurship potential based on an aggregated score of their measured personality traits of autonomy, innovativeness, and risk-taking propensity. In order to inform the significance of the UPLOAD JOBS screening process of differentiating and selecting OSY with 'potential' from the broader population for program entry, the following hypothesis was offered for testing:

H1 OSY entrepreneurship perceptions, attitudes and involvement in entrepreneurial activity differ between individuals who were selected for participation in the UPLOAD JOBS program and those that were not.

3.3.2 Program performance

The UPLOAD JOBS program consisted of five courses (introduction to entrepreneurship, finance, marketing, business plans and new ventures), interactive workshops, guest speakers, engaging field trips, and program-specific competitions that fostered and empowered OSY to engage in entrepreneurship. In order to evaluate the UPLOAD JOBS program performance outcomes, the following hypothesis was offered for testing:

H2 After attending the UPLOAD JOBS program in Mindanao, OSY changed their entrepreneurship perceptions, attitudes and involvement in entrepreneurial activity.

3.4 Methods

3.4.1 Identifying and modifying items for OSY measurement in a survey

The GEM's APS (2003) was reviewed to identify empirical measurement items that could be transferred and modified to support the case study context of OSY in Mindanao, Philippines. A total of 29 empirical measures were extracted from the GEM's APS for measurement. Items were selected based on stakeholder discussion and feedback regarding applicability to study objectives, OSY context and comprehension, and consideration of participant response fatigue. Stakeholders included four professionals and researchers in the field of entrepreneurship and

international development in the U.S. and Europe, and two program staff from the Philippines (minimum Bachelor of Science or Arts degree from the region of Mindanao).

Entrepreneurship attitudes and perceptions

Five items measuring individual perceptions and attitudes were extracted from the GEM's APS. Table 3.1 lists the five items that were extracted for measurement. These five items offered four possible choice responses: "Yes," "No," "Don't know," or "Refused" (GEM, 2003).

Table 3.1 Items extracted from the Global Entrepreneurship Monitor's 'Adult Population Survey' to measure out-of-school youth (OSY) attitudes and perceptions regarding entrepreneurial activity in Mindanao, Philippines.

In the next six months, will there be good opportunities for starting a business in the area where you live?
Do you have the knowledge, skill and experience required to start a business?
Would fear of failure prevent you from starting a business?
In your country, most people would consider starting a new business a desirable career choice
In your country, those successful at starting a new business have a high level of status and respect.

Source: Global Entrepreneurship Monitor (2003). Adult population survey [Data file: http://www.gemconsortium.org/data/sets]

In order to improve OSY understanding of measurement items in Mindanao, the five items that measured individual entrepreneurship perceptions and attitudes in the APS (Table 3.1) were modified and expanded to represent seven items in the OSY-specific survey. Table 3.2 lists the initial measurement item and the modified version used in the survey to account for OSY context. The item "Would fear of failure prevent you from starting a business?" was expanded to represent three items exploring OSY attitudes and perceptions of their entrepreneurial limitations due to their potential misconceptions of the phrase 'fear of failure'.

Table 3.2 Modifications made to survey items selected from the 'Adult Population Survey' to measure OSY entrepreneurship perceptions and attitudes in Mindanao, Philippines. Modifications were made based on feedback from experts and local program counterparts.

Adult Population Survey	*Survey for OSY in Mindanao, Philippines*
In the next six months, will there be good opportunities for starting a business in the area where you live?	In the next 6 months, there will be good opportunities for starting a business in the area that I live
Do you have the knowledge, skill and experience required to start a business?	I believe that at present, I have the knowledge, skill and experience required to start a new business
Would fear of failure prevent you from starting a business?	I am afraid of the risk of not being successful, and this fear limits my intention of starting a business.
	I believe that my limited knowledge of entrepreneurship prevents me from starting a business
	I believe that further training through entrepreneurship programs can help correct this information gap
In your country, most people would consider starting a new business a desirable career choice	In the area that I live, I believe that most people consider starting a new business a desirable career choice
In your country, those successful at starting a new business have a high level of status and respect.	In the area that I live, I believe that people are successful at starting a new business have a high level of status and respect

Entrepreneurship activities

Twenty-four items were extracted to measure and describe OSY involvement in entrepreneurial activities. These items represented categorical choice items, semi-quantitative and qualitative responses exploring individual start up activity (one item), motivations (one item), new business activity as a nascent or new entrepreneur (12 items), and new business information as a nascent or new entrepreneur (10 items). Items were modified to account for OSY's barangay-level context, comprehension, and relevance to the UPLOAD JOBS program in Mindanao, Philippines.

3.4.2 Enhancing items to measure program outcomes

Entrepreneurship attitudes and perceptions

Items related to individual perceptions and attitudes were modified from their original four possible responses (Yes, No, Don't know, Refused) to represent a seven-point bipolar Likert scale of 1 strongly disagree to 7 strongly agree. A seven-point bipolar Likert scale was chosen based on Ajzen's instructions to researchers in "Constructing a Theory of Planned Behavior Questionnaire" (2006) (Azjen, 2006; Azjen and Fishbein, 2010). Azjen's (2006) approach allows for data to be collected before and after an experimental program in order to measure and compare changes and/ or outcomes from program intervention (Kohn and Rockwell, 1989; Wolf *et al*., 2000; Dimitrov and Rumrill, 2003; Karppinen, 2005).

Entrepreneurship activities

Due to the limited information available about OSY entrepreneurship activities in Mindanao, Philippines, the 24 extracted items used to measure and describe OSY involvement in entrepreneurial activities remained in their respective categorical choice, semi-quantitative and qualitative response forms as the APS. Four additional questions were added to the survey based on expert feedback to measure OSY business growth (two items) and business approach (two items) (*see 'Additional Research' in Table 3.3*).

3.4.3 Finalizing a 'Youth Population Survey' in Mindanao, Philippines

Experts in the field of entrepreneurship at the post-secondary institutional level in the U.S., Europe, and the Philippines (minimum Bachelor of Science or Arts degree from the region of Mindanao) provided their feedback on any unclear and vague items, and the questionnaire's suitability to measure OSY entrepreneurship attitudes, perceptions, activities and program outcomes. Based on their feedback, no major adjustments or revisions were required. To support OSY comprehension and acknowledge the region's cultural and ethnic diversity, the survey was translated into the dialects of Ilongo, Cebuano, Maguindanaon, and Tagalog. Local project counterparts reviewed the survey for grammar and OSY context and comprehension.

The survey was titled the 'Youth Population Survey' (YPS) to distinguish it from the GEM's 'Adult Population Survey' that measured adult entrepreneurship attitudes, perceptions, and

activities. The YPS was administered as a pilot during the first entrepreneurship-training program to OSY (N = 42) in January of 2013. OSY that participated in the first entrepreneurship-training program were selected based on the program's pilot screening process. Based on this pilot administration, revisions to verbiage of select items were made to establish an improved and final YPS. Table 3.3 provides a list of the 37 items and units used in the final 'Youth Population Survey' to measure OSY entrepreneurship perceptions, attitudes and activities in Mindanao, Philippines.

Table 3.3 Description of survey items and units used in the 'Youth Population Survey' to measure OSY entrepreneurship perceptions, attitudes and activities. This survey was administered by the UPLOAD JOBS program in the provinces of Cotabato and Sultan Kudarat in Mindanao, Philippines (2013 – 2015).

	Youth Population Survey Items	*Unit*
Attitude and Perception of Entrepreneurship		
1	In the area that I live, I believe that most people consider starting a new business a desirable career choice	Strongly Disagree Disagree Somewhat Disagree Neutral Somewhat Agree Agree Strongly Agree
2	In the area that I live, I believe that people are successful at starting a new business have a high level of status and respect	
3	In the next 6 months, there will be good opportunities for starting a business in the area that I live	
4	I believe that the area that I live has the resources I need to start my own business or business venture	
5	I believe that at present, I have the knowledge, skill and experience required to start a new business	
6	I am afraid of the risk of not being successful, and this fear limits my intention of starting a business.	
7	I believe that my limited knowledge of entrepreneurship prevents me from starting a business	
8	I believe that further training through entrepreneurship programs can help correct this information gap	
Entrepreneurship Activity		
9	Have you started up or owned a business before?	No Yes
Entrepreneurship Venture Information		
10	Type of Business	10 categorical choice items
11	Has this business plan developed into an existing business?	No Yes
12	If no (question 11) are you expecting to develop this business in the next year?	
13	I am currently a nascent (developing) entrepreneur	
14	This business idea was developed	On my own With others In collaboration with existing employer Other
15	This business idea will be pursued	
16	How much personal monetary contribution (i.e., personal savings) have you contributed for this business? (Please state in %, 100% indicates total personal monetary contribution)	Continuous, Percent

Table 3.3 (Continued) Description of survey items and units used in the 'Youth Population Survey' to measure OSY entrepreneurship perceptions, attitudes and activities.

17	How much personal non-monetary contribution (i.e., committed time) have you contributed for this business? (Please state in %, 100% indicates total personal non-monetary contribution)	Continuous, Percent
18	At what phase is this new business:	Phase 1: Existence Phase 2: Survival Phase 3: Success Phase 4: Revenue-earning Phase 5: Resource Expansion Other
19	For how long have you been involved with this new business/ venture? Indicate month(s) or year(s)	Continuous
20	This business is based on a completely new and innovative idea, not an existing one that has just been improved (technology, materials, marketing, etc.)	Strongly Disagree Disagree Somewhat Disagree Neutral Somewhat Agree Agree Strongly Agree
21	This new business is related to that of my most recent employer	
23	Why are you involved in this business opportunity?	Take advantage of business opportunity No better choice for work or income Have a job but seek better opportunities Other
24	Where is your business currently running from?	On my household property I am renting a space I bought a place (for the business) Other

Table 3.3 (Continued) Description of survey items and units used in the 'Youth Population Survey' to measure OSY entrepreneurship perceptions, attitudes and activities.

25	How would you best describe the geographical procurement (acquisition of equipment, materials and/or supplies) coverage of your business?	Local Only Local & Regional Local & National Local & International Other
26	How would you best describe the geographical production/processing coverage of your business?	
27	How would you best describe the geographical market coverage of your business?	
28	Since the initial start up of your business, I have received useful advice and information from the following people: a. Spouse/ family member b. Friend c. An existing business owner d. Current/ former colleague e. SCC Faculty/ SCC CEREA Extension f. Non-governmental organization g. Government agency h. Center of Agriculture and Farmland Entrepreneurship i. Director UPLOAD JOBS program staff	Strongly Disagree Disagree Somewhat Disagree Neutral Somewhat Agree Agree Strongly Agree
29	In order to start this business, did you consider financial assistance from the following (check all that apply)	Bank Friend Family member or relative Current employer I did not consider financial assistance Other
30	For this business, have you received any financial assistance from the following (check all that apply)	
31	In the past 6 months, including yourself, how many people on your business team are paid: _____ and not paid:_____ to work for this business	Continuous
32	In the past 6 months, excluding you, how many people have you hired and paid, outside of your family and business team, to work for this business? Please specify number	Continuous
33	In the past 6 months, excluding you, how many people have you hired and paid, within your family, to work for this business? Please specify number of family members hired	Continuous
Additional Research		
34	Has the new business begun making profits (financial benefit that is gained when the amount of revenue gained from a business activity exceeds the expenses) in the past 6 months?	No Yes

Table 3.3 (Continued) Description of survey items and units used in the 'Youth Population Survey' to measure OSY entrepreneurship perceptions, attitudes and activities.

35	In the next year, I project positive growth in profits for this new business	Strongly Disagree Disagree Somewhat Disagree Neutral Somewhat Agree Agree Strongly Agree
36	In the next year, I project positive growth in employment (personnel) for this new business	Strongly Disagree Disagree Somewhat Disagree Neutral Somewhat Agree Agree Strongly Agree
37	The aim of my business is mainly to provide customers with: a better quality product for the same (or slightly higher) price as my competitors or to provide customers with a cheaper price for the same quality product	Cheaper Price _ _ _ _ _ Better Quality

3.4.4 Administering the 'Youth Population Survey'

The YPS was administered between September 2013 to May 2015 in the municipalities of Midsayap in Cotabato Province and Esperanza in Sultan Kudarat Province of Mindanao, Philippines. These two municipalities hosted the entrepreneurship-training programs and were selected based on the program's funding designation and SCC's existing involvement and relations with local barangays, and program security. A program research staff and a translator facilitated the administration of the survey, while additional staff was available for administrative support. Prior to survey administration, OSY were informed about the content of the survey, procedures of the administration, and how to record their responses. An additional profile form was administered alongside the YPS to contribute additional demographic and

socio-economic information about OSY. Administration was approximately one hour to an hour and a half in length.

Defining OSY for survey measurement and analyses

The administration of the YPS included three sets of data collection: 1) OSY that were selected for training were administered the YPS on-site on the first day of training, prior to program implementation (T1); 2) OSY who were randomly selected and not associated to the training program at all that were administered the YPS while the training program was ongoing and off-site (i.e., on the streets and at nearby markets surrounding the training area); and 3) OSY who were selected for training were administered the YPS again six-months after training (T2). To support survey data organization, OSY who were selected for training were referred to as Group A, while OSY who were not associated to training program at all were referred to as Group B.

3.4.5 Data analysis

Data for this research were analyzed using SPSS Version 23. Table 3.4 lists the survey items, measurement scale, and unit of measurement considered for data analyses. Data collected from items 10 – 37 of the YPS were not included in this research analyses, but were instead summarized to provide feedback to the UPLOAD JOBS program about OSY's new businesses. In this research, a business was defined as selling a product or service.

Program screening: Group A at T1 versus Group B (Hypothesis 1)

To evaluate the UPLOAD JOBS program screening outcomes, the mean, standard deviation, independent sample *t*-statistic, degrees of freedom and significance level of each seven-point Likert item measuring Group A and Group B's entrepreneurship perceptions and attitudes, and binary item measuring their entrepreneurial activity were determined and compared. The Levene's test was used to test for significant differences in variance between the two groups.

Program performance: Group A at T1 versus T2 (Hypothesis 2)

To evaluate the UPLOAD JOBS performance outcomes, only Group A OSY that completed the YPS survey at the onset of training (T1) and six-months after training (T2) were considered for analyses. The mean, standard deviation, paired sample *t*-statistic, degrees of freedom and significance level of each seven-point Likert item measuring their entrepreneurship perceptions

and attitudes, and binary item measuring their entrepreneurial activity were then determined and compared.

Table 3.4 Descriptions of survey items used, measurement scale and unit of measurement considered for analyses.

Measure of Entrepreneurship	*Description of survey item*	*Measurement scale*	*Unit*
Perception	In the area that I live, I believe that most people consider starting a new business a desirable career choice	Seven- point Likert scale	{1, Strongly Disagree -> 7, Strongly Agree}
	In the area that I live, I believe that people are successful at starting a new business have a high level of status and respect	Seven- point Likert scale	{1, Strongly Disagree -> 7, Strongly Agree}
	In the next 6 months, there will be good opportunities for starting a business in the area that I live	Seven- point Likert scale	{1, Strongly Disagree 7, Strongly Agree}
	I believe that the area that I live has the resources I need to start my own business or business venture	Seven- point Likert scale	{1, Strongly Disagree -> 7, Strongly Agree}
Attitude	I believe that at present, I have the knowledge, skill and experience required to start a new business	Seven- point Likert scale	{1, Strongly Disagree -> 7, Strongly Agree}
	I believe that further training through entrepreneurship programs can help correct this information gap.	Seven- point Likert scale	{1, Strongly Disagree -> 7, Strongly Agree}
	I am afraid of the risk of not being successful, and this fear limits my intention of starting a business.	Seven- point Likert scale	{1, Strongly Disagree -> 7, Strongly Agree}
	I believe that my limited knowledge of entrepreneurship prevents me from starting a business	Seven- point Likert scale	{1, Strongly Disagree -> 7, Strongly Agree}
Activity	Have you started or owned a business before?	Binary	0, No/ 1, Yes

3.5 Results

3.5.1 Program screening: Group A versus Group B (Hypothesis 1)

Sample selection

A total of 220 OSY participated in the YPS between the periods of September 2013 and May 2015. To be specific, 130 OSY were from Group A that were selected for training, where one survey was removed due to missing data (N = 129, 1 removed), and 90 OSY from Group B that were not selected or associated to the training program at all (N = 90). Table 3.5 provides a summary of Group A and B OSY demographics and socio-economic information that participated in the YPS.

Table 3.5 Frequency statistics of Group A that were selected for training (N = 129, 1 removed) and B that were not selected or associated to the training program at all (N = 90) demographics that completed the 'Youth Population Survey' between September 2013 and May 2015 in Mindanao, Philippines.

	Group A *Selected for training*	*Group B* *Not selected for training*
Sample (*N*)	129	90
Gender (*Female)*	52 (40.3%)	40 (44.4%)
Education (*High School Diploma)*	123 (95.3%)	81 (90%)
Religion (*Christian)*	115 (89.1%)	44 (48.9%)
Family Size (*Average no. of individuals*)	8	7
Family owns a farm	34 (26.3%)	48 (53.3%)
Participated in former Government or NGO training	47 (36.4%)	33 (36.7%)

Based on program age criteria, OSY considered for analyses were between the ages of 18 – 24 years where 40.3% of respondents represented females in Group A that were selected and invited for training and 44.4% in Group B that were not selected or associated to the training program at all. Despite being referred to as "out-of-school", at least 90% of OSY indicated completing a high school education across both groups. Household size averaged about eight members for Group A and seven members for Group B. According to OSY self-reported religions, Group A

consisted of 89.1% Christians and Group B 48.9%. In regards to the percent of OSY that reside on a household farm, 26.3% of Group A self-reported residing on family owned farm versus the over 50% of Group B. Approximately 36% of OSY from each group self-reported having formerly participated in a government or non-government organization program in the past year, indicating access to support and development programs in the region.

OSY entrepreneurship attitudes and perceptions

Table 3.6 provides descriptive statistics (mean, standard deviation, *t*-statistic, degrees of freedom and significance level) of OSY self-reported responses measuring their entrepreneurship attitudes and perceptions in the YPS. Data were collected in Mindanao, Philippines, between September 2013 and May 2015 from 219 OSY of Group A that were selected and invited for training and 90 OSY of Group B that were not selected or associated to the training program at all.

Table 3.6 Descriptive statistics (mean, standard deviation, *t*-statistic, degrees of freedom and significance level) of OSY self-reported responses measuring their entrepreneurship attitudes and perceptions in the YPS. Data were collected in Mindanao, Philippines, between September 2013 and May 2015. Results from the survey were based on a seven-point Likert scale (1, Strongly disagree to 7, Strongly agree) and organized by group, Group A that were selected and invited for training (N = 129, 1 removed) and B that were not selected or associated to the training program at all (N = 90) of OSY between the ages of 18 – 24 years.

	Group A *Selected for training (N=129, 1 removed)*		*Group B* *Not selected for training (N=90)*			
Survey Item	*Mean*	*SD*	*Mean*	*SD*	*t*	*df*
Entrepreneurship Perception						
In the area that I live, I believe that most people consider starting a new business a desirable career choice	5.73	1.418	5.86	1.303	-0.673	217
In the area that I live, I believe that people are successful at starting a new business have a high level of status and respect	6.05	1.465	5.57	1.573	2.351*	217
In the next 6 months, there will be good opportunities for starting a business in the area that I live	6.07	1.117	5.56	1.507	2.752*	154.79
I believe that the area that I live has the resources I need to start my own business or business venture	6.27	1.242	5.81	1.244	2.696*	217
Entrepreneurship Attitude						
I believe that at present, I have the knowledge, skill and experience required to start a new business	6.36	1.007	5.86	1.303	3.269*	217

Table 3.6 (Continued) Descriptive statistics (mean, standard deviation, *t*-statistic, degrees of freedom and significance level) of OSY self-reported responses measuring their entrepreneurship attitudes and perceptions in the YPS.

I believe that further training through entrepreneurship programs can help correct this information gap.	6.54	1.159	6.24	0.998	1.981*	217
I am afraid of the risk of not being successful, and this fear limits my intention of starting a business.	3.74	2.119	4.76	1.788	-3.814*	209.18
I believe that my limited knowledge of entrepreneurship prevents me from starting a business	4.70	2.064	4.78	1.859	-0.294	217
*$p<0.05$						

Based on a Likert scale of 1 (Strongly disagree) to 7 (Strongly agree) measuring OSY entrepreneurship perceptions, there was no significant difference between Group A responses ($M = 5.73$, $SD = 1.418$) and Group B responses ($M = 5.86$, $SD = 1.303$) for the item "In the area that I live, I believe that most people consider starting a new business a desirable career choice", $t(217) = 0.673$, $p = 0.502$. On the other hand, a *t*-test for the item "In the area that I live, I believe that people are successful at starting a new business have a high level of status and respect" revealed that Group A responded significantly more positively ($M = 6.05$, $SD = 1.465$) than Group B ($M = 5.57$, $SD = 1.573$), $t(217) = 2.351$, $p<0.05$. Group A also responded significantly more positively ($M = 6.07$, $SD = 1.117$) than Group B ($M = 5.56$, $SD = 1.507$) for the item "In the next 6 months, there will be good opportunities for starting a business in the area that I live", $t(217) = 1.507$, $p<0.05$. In addition, for the item "In the area that I live, I believe that people are successful at starting a new business have a high level of status and respect" Group A responded significantly more positively ($M = 6.27$, $SD = 1.242$) than Group B ($M = 5.81$, $SD = 1.244$), $t(217) = 2.696$, $p<0.05$.

Based on a Likert scale of 1 (Strongly disagree) to 7 (Strongly agree) measuring OSY entrepreneurship attitudes, a *t*-test revealed a significant difference between Group A responses ($M = 6.36$, $SD = 1.007$) and Group B responses ($M = 5.86$, $SD = 1.303$), for the item "I believe

that at present, I have the knowledge, skill and experience required to start a new business", $t(217) = 3.269$, $p<0.05$; in addition, for the item "I believe that further training through entrepreneurship programs can help correct this information gap", where Group A responded significantly more positively ($M = 6.54$, $SD = 1.159$) than Group B responses ($M = 6.24$, $SD = 0.998$), $t(217) = 1.981$, $p<0.05$. On the other hand, Group B responded significantly more positively ($M = 4.76$, $SD = 1.788$) than Group A responses ($M = 3.74$, $SD = 2.119$) for the item "I am afraid of the risk of not being successful, and this fear limits my intention of starting a business", $t(209.18) = 3.814$, $p<0.05$. Finally, there was no significant difference between Group A responses ($M = 4.70$, $SD = 2.064$) and Group B responses ($M = 4.78$, $SD = 1.859$) for the item, "I believe that my limited knowledge of entrepreneurship prevents me from starting a business", $t(217) = 0.294$, $p = 0.769$.

OSY entrepreneurship activities

Table 3.7 provides descriptive statistics (mean, standard deviation, *t*-statistic, degrees of freedom and significance level) of OSY self-reported responses to the item "Have you started up or owned a business before?" measuring their entrepreneurial activity in Mindanao, Philippines. Based on this item, a *t*-test revealed a significant difference between Group A responses at T1 ($M = 0.16$ $SD = 0.363$) and Group B responses ($M = 0.01$, $SD = 0.105$), given a binary choice response of 0 'No' and 1 'Yes', $t(157.448) = 4.250$, $p<0.05$

Table 3.7 Descriptive statistics (mean, standard deviation, *t*-statistic, degrees of freedom and significance level) of OSY self-reported responses measuring their entrepreneurship activities in the YPS. Data were collected in Mindanao, Philippines, between September 2013 and May 2015. Results from the survey were based on a binary variable of 0 coded as 'No' and 1 coded as 'Yes' and organized by group, Group A that were selected and invited (N = 129, 1 removed) and B that were not selected or associated to the training program at all (N = 90).

	Group A *Selected for training (N=129, 1 removed)*		*Group B* *Not selected for training, (N=90)*			
	Mean	*SD*	*Mean*	*SD*	*t*	*df*
Survey item						
Have you started up or owned a business before?	0.16	0.363	0.01	0.105	4.250*	157.448
**p<0.05*						

Based on these results, Group A and B responses to items measuring their entrepreneurship attitudes, perceptions and activities were significantly different.

3.5.2 Program performance: Group A at T1 versus T2 (Hypothesis 2)

Table 3.8 provides a summary of OSY demographics and socio-economic information that participated in the YPS at the onset of training (T1, N=129) and six-months after training (T2, N=39). OSY demographic information illustrates a proportionally similar sample population at T1 and T2 as it relates to their gender, education level, and religion. Based on program age criteria, OSY considered for analyses were between the ages of 18 – 24 years where 40.3% of respondents represented females at T1 and 38.5% at T2. Over 90% of OSY indicated completing a high school education across both groups. OSY were predominantly of the Christian religion at T1 and T2 (at least 80%). Differences in OSY household size indicate approximately eight members at T1 and six members at T2, respectively. In regards to the percent of OSY that reside on a household farm, 26.3% resided on a household farm at T1 and 30.8% at T2.

Table 3.8 Frequency statistics of OSY demographics that were selected for training and completed the 'Youth Population Survey' at the onset of training (T1) and six-months after training (T2) between September 2013 and May 2015 in Mindanao, Philippines.

Group A *Selected for training*	*Onset of training, T1 (percent)*	*Six-months after training, T2 (percent)*
Sample (*N*)	129	39
Gender (*Female)*	52 (40.3%)	15 (38.5%)
Education (*High School Diploma)*	123 (95.3%)	37 (94.9%)
Religion (*Christian)*	115 (89.1%)	33 (84.6%)
Family Size *(Average no. of individuals)*	8	6
Family owns a farm	34 (26.3%)	12 (30.8%)

Sample selection

To address hypothesis 2, only OSY that completed the YPS survey at the onset of training (T1) and six-months after training (T2) were considered for analyses (N=39, 90 missing). Table 3.9 provides a summary of the number of OSY that were selected for training (Group A) and participated in the YPS at the onset of training (T1) and six-months after training (T2) based on gender (N = 39, 90 missing). There was a high number of missing cases at T2 (90 missing) compared to T1 due, but not limited to, out-of-service mobile numbers after training (limited contact information of OSY), lack of OSY interest, active conflict in specific barangays, and no monetary compensation for transportation to Southern Christian College to participate in the survey six-months after training.

Table 3.9 Frequency statistics of OSY participation in the Youth Population Survey (YPS) that were invited for training and completed the YPS at the onset of training (T1) and six-months after training (T2) between the period of September 2013 and May 2015 in Mindanao, Philippines. Data were organized based on gender.

	Male	*Female*	*Total*
Onset of training (T1)	77	52	129
Six-months after training (T2)	24	*15*	39
Missing at T2	53	37	90
	(68.8%)	*(71.1%)*	*(69.8%)*

OSY entrepreneurship attitudes and perceptions

Table 3.10 provides descriptive statistics (mean, standard deviation, *t*-statistic, degrees of freedom and significance level) of OSY self-reported responses measuring their entrepreneurship perceptions and attitudes that were selected for training and completed the YPS at the onset of training (T1) and six-months after training (T2), respectively (N = 39, 90 missing).

Table 3.10 Descriptive statistics (mean, standard deviation, *t*-statistic, degrees of freedom and significance level) of OSY self-reported responses to items measuring their entrepreneurship perceptions and activities that were selected for training and completed the YPS at the onset (T1) and six-months after training (T2), respectively, in Mindanao, Philippines (N = 39, 90 missing). Data were collected between September 2013 and May 2015. Results from the survey were based on a seven-point Likert scale (1, Strongly Disagree to 7, Strongly Agree) and organized by survey administration (T1 vs. T2)

N = 39, 90 missing	*Onset of training (T1)*		*Six-months after training (T2)*			
Survey Item	*Mean*	*SD*	*Mean*	*SD*	*t*	*df*
Entrepreneurship Perception						
In the area that I live, I believe that most people consider starting a new business a desirable career choice	5.85	0.988	5.28	1.877	1.800	38
In the area that I live, I believe that people are successful at starting a new business have a high level of status and respect	5.87	1.625	5.08	1.938	1.934	38
In the next 6 months, there will be good opportunities for starting a business in the area that I live	6.15	1.136	5.62	1.330	2.142*	38
I believe that the area that I live has the resources I need to start my own business or business venture	6.24	1.422	6.16	0.718	0.329	37
Entrepreneurship Attitude						
I believe that at present, I have the knowledge, skill and experience required to start a new business	6.38	1.042	6.08	0.957	1.638	38
I believe that further training through entrepreneurship programs can help correct this information gap.	6.49	1.355	5.92	1.133	2.094*	38

Table 3.10 (Continued) Descriptive statistics (mean, standard deviation, *t*-statistic, degrees of freedom and significance level) of OSY self-reported responses to items measuring their entrepreneurship perceptions and activities that were selected for training and completed the YPS at the onset (T1) and six-months after training (T2), respectively, in Mindanao, Philippines (N = 39, 90 missing).

I am afraid of the risk of not being successful, and this fear limits my intention of starting a business.	3.44	2.049	4.41	2.161	-2.349*	38
I believe that my limited knowledge of entrepreneurship prevents me from starting a business	4.64	2.006	4.46	2.050	0.374	38
*$p<0.05$						

Based on a Likert scale of 1 (Strongly disagree) to 7 (Strongly agree) measuring OSY entrepreneurship perceptions, OSY responses at the onset ($M = 5.85$, $SD = 0.998$) and six-months after training ($M = 5.28$, $SD = 1.877$) for the item, "In the area that I live, I believe that most people consider starting a new business a desirable career choice", $t(38) = 1.800$, $p = 0.08$, were not significantly different. There was also no significant difference between OSY responses at the onset ($M = 5.87$, $SD = 1.625$) and six-months after training ($M = 5.08$, $SD = 1.938$) for the item, "In the area that I live, I believe that people are successful at starting a new business have a high level of status and respect", $t(38) = 1.934$, $p = 0.061$. OSY responses at the onset ($M = 6.24$, $SD = 1.422$) and six-months after training ($M = 6.16$, $SD = 0.718$) for the item, "In the area that I live, I believe that most people consider starting a new business a desirable career choice", $t(38) = 1.934$, $p = 0.744$, were also not significantly different. On the other hand, OSY responses were significantly more positive at the onset of training ($M = 6.15$, $SD = 1.136$) compared to six-months after training ($M = 5.62$, $SD = 1.330$) for the item, "In the next 6 months, there will be good opportunities for starting a business in the area that I live", $t(38) = 2.142$, $p<0.05$.

Based on a Likert scale of 1 (Strongly disagree) to 7 (Strongly agree) measuring OSY entrepreneurship attitudes, a paired sample *t*-test revealed a significant difference between OSY responses at the onset of training ($M = 6.49$, $SD = 1.355$) and at six-months after training ($M = 5.92$, $SD = 1.133$), for the item "I believe that further training through entrepreneurship programs can help correct this information gap", $t(38) = 2.094$, $p<0.05$. In addition, there was a significant difference in OSY's self-reported responses for the item "I am afraid of the risk of not being

successful, and this fear limits my intention of starting a business", where OSY six-months after training responded significantly more positively ($M = 4.41$, $SD = 2.161$) than at the onset of training ($M = 3.44$, $SD = 2.049$), $t(38) = 2.349$, $p<0.05$. On the other hand, there was no significant difference between OSY responses at the onset ($M = 6.38$, $SD = 1.042$) and six-months after training ($M = 6.08$, $SD = 0.957$) for the item "I believe that at present, I have the knowledge, skill and experience required to start a new business", $t(38) = 1.638$, $p = 0.110$. In addition, there was no significant difference between OSY responses at the onset ($M = 4.64$, $SD = 2.006$) and six-months after training ($M = 4.46$, $SD = 2.050$) for the item, "I believe that my limited knowledge of entrepreneurship prevents me from starting a business", $t(38) = 0.374$, $p = 0.771$.

OSY entrepreneurship activities

Table 3.11 provides descriptive statistics (mean, standard deviation, *t*-statistic, degrees of freedom and significance level) of OSY's self-reported responses measuring their entrepreneurship activities that were selected for training and completed the survey at the onset (T1) and six-months after training (T2) in Mindanao, Philippines (N = 39, 90 missing). Based on the survey item, "Have you started up or owned a business before?" a *t*-test did not show a significant difference between OSY responses at the onset ($M = 0.21$ $SD = 0.409$) and six-months after training ($M = 0.41$, $SD = 0.498$), $t(38) = 1.670$, $p = 0.103$.

Table 3.11 Descriptive statistics (mean, standard deviation, *t*-statistic, degrees of freedom and significance level) of OSY's self-reported responses measuring their entrepreneurship activities that were selected for training and completed the YPS at the onset (T1) and six-months after training (T2) in Mindanao, Philippines (N = 39, 90 missing). Data were collected between September 2013 and May 2015. Results are based on a binary variable of 0 coded as 'No' and 1 coded as 'Yes', and organized by survey administration (T1 vs. T2).

N = 39, 90 missing	*Onset of training (T1)*		*Six-months after training (T2)*			
Survey item	*Mean*	*SD*	*Mean*	*SD*	*t*	*df*
Have you started up or owned a business before? (0 No/ 1 Yes)	0.21	0.409	0.41	0.498	-1.670	38
**p<0.05*						

Based on OSY's self-reported responses measuring their entrepreneurial activity that were selected for training and completed the YPS at the onset and six-months after training, 31 OSY self-reported not having owned or managed a business at the onset of training. On the other hand, 16 OSY self-reported being a business owner six-months after training (14 of whom did not own or manage a business at T1). Results suggest that the UPLOAD JOBS program was successful at changing OSY entrepreneurship activities (i.e., the total number of OSY that owned or managed a business at T2 has changed since T1), however, not statistically significantly.

Based on these results, OSY responses to items measuring their entrepreneurship perceptions, attitudes and activities at the onset of training (T1), were not significantly different to their responses six-months after training (T2).

3.6 Discussion

This research discussed the development a 'Youth Population Survey' adapted on the basis of the Global Entrepreneurship Monitor's 'Adult Population Survey' that supported the UPLOAD JOBS program management for three purposes. First, it provided a measurement tool that the UPLOAD JOBS program could use to measure and evaluate program outcomes. Second, it offered an opportunity for the program to obtain empirical data on OSY entrepreneurship perceptions, attitudes and activities in Mindanao, Philippines. Third, it afforded information concerning the program's outcomes that were used to evaluate its implementation and performance.

OSY who were selected for training based on their entrepreneurship 'potential' (Group A) responded significantly differently to seven out of nine items measuring their entrepreneurship attitudes, perceptions and activities compared to OSY who were not selected or associated to the training program at all (Group B). In addition, Group A and B OSY differentiated in demographic profiles based on religion and household farm ownership. Those that were screened and selected for training were predominantly Christian (Group A, 89%) compared to those that

were not selected or associated to the training program at all (Group B, 49%). Differences in OSY religion suggested that SCC, a Christian institution, might have had an impact on OSY interest and involvement in the program. Moreover, OSY that were not associated to the training program at all predominantly resided on household farms, suggesting that these OSY may not be able to commit to a program like the UPLOAD JOBS that was nine full consecutive days in length.

OSY's significant decreases in OSY's self-reported responses to items measuring their entrepreneurship perceptions (i.e., 'In the next 6 months there will be good opportunities for starting a business in the area that I live') and attitudes (i.e., 'Further training through entrepreneurship programs can help correct this information gap'), and increase in fears related to entrepreneurship (i.e., 'I am afraid of the risk of not being successful, and this fear limits my intention of starting a business') six-months after training suggested that the UPLOAD JOBS program may not have been successful in fostering a supportive culture of entrepreneurship for OSY in Mindanao, Philippines. On the other hand, given earlier findings in the dissertation that OSY are necessity entrepreneurs (i.e., need a job and/ or an income), they may not require positive perceptions and attitudes towards entrepreneurship to engage in it. Nevertheless, given that the majority of OSY had no experience in entrepreneurship prior to program implementation, OSY decreases in their entrepreneurship perceptions and attitudes may have been a result of their more realistic perception and attitude of entrepreneurship after engaging in it beyond program support.

3.6.1 Limitations and future recommendations

Administering a survey to OSY at the onset and six-months after training led to challenges in OSY survey participation (i.e., sample size). Tracking OSY six-months after training was particularly challenging when program staff were limited to only mobile numbers for follow-up contact. Larger sample sizes allows for greater statistical power to detect differences between sample groups (Stevens, 2012). In addition, due to limitations in program funding, the UPLOAD JOBS program could not afford to pay for the transportation of OSY to participate in the survey at the annual colloquium held in Midsayap of Cotabato Province. This was a particular concern for OSY that resided in other municipalities or provinces such as Esperanza in Sultan Kudarat

Province. The program made a special effort to administer the YPS in Esperanza six-months after training; however, without incentives like that supported by the annual colloquium (i.e., activities, prizes, food) at SCC, OSY in Esperanza were not as diligent to participate. Therefore, the loss in sample size may have impacted the statistical significance of research results.

Recommendation 1: Researchers interested in administering any type of follow-up survey after program intervention should have more than one method to contact OSY and must consider OSY access to the survey administration site (i.e., compensation for transportation or provide transportation), incentives that engage OSY participation (i.e., food, prizes, activities), and a method of survey administration that supports the highest possible response rate (i.e., using social media to administer an online survey like Facebook or survey monkey instead of in-person).

OSY's decrease in their perceptions and attitudes of entrepreneurship six-months after program participation suggested two concerns related to the UPLOAD JOBS program data collection and performance. First, OSY's new knowledge about entrepreneurship after program participation may have allowed them to answer the same questions from the YPS more accurately or authentically six-months after training than before program participation (Rockwell and Kohn, 1989). Second, the UPLOAD JOBS program was not successful in fostering OSY's positive entrepreneurship perceptions and attitudes in Mindanao, Philippines.

Recommendation 2: A retrospective type of study or a single post-test survey that documents: 1) what specific behavior resulted as an outcome of the program; and 2) what the behavior had been before the program, is recommended to produce more legitimate assessments of program outcomes (Rockwell and Kohn 1989; Pratt et al., 2000).

Recommendation 3: Entrepreneurship-training programs should prioritize social-psychological aspects (i.e., entrepreneurship perceptions and attitudes) of training to foster an opportunistic culture of entrepreneurship that promotes OSY entrepreneurship behaviors and activities in Mindanao, Philippines.

Differences in OSY profiles of religion and household farm status in this research suggested socio-cultural limitations related to OSY entrepreneurship interest and engagement in program activities. Religion and agriculture represent major social and natural livelihood components in Mindanao, Philippines (Bloom *et al*., 2012; MDA, 2015), and based on the extant entrepreneurship literature may reflect cultural factors that influence individual entrepreneurship interest, engagement and access to resources (Basu and Altinay, 2002; Hisrich *et al*., 2007; Aldrich, 2008; Dana, 2009). OSY gender and marital status are additional cultural factors that have been recognized in the extant development literature to influence individual behaviors and decision-making in developing country contexts. Naafs (2013) study of youth gender and participation in the formal labor market in a small Indonesian town found that females were just as competitive as males in the formal labor market so as long as they were unmarried and not pregnant or had children (Naafs, 2013). While Naafs (2013) study did not measure or evaluate youth entrepreneurship perceptions or attitudes, it suggested that youth engagement and involvement in entrepreneurial activities or entrepreneurship-training programs might be influenced by their gender, marital status, and household dynamics (i.e., having children).

Recommendation 4: Entrepreneurship-training programs should consider a non-religious or neutral host institution, program length/ duration (i.e., half a day over a longer period of time, or only weekends, etc.), and other socio-cultural implications of gender, marital status and household dynamics (i.e., having children) when designing and implementing programs in culturally sensitive regions of developing countries.

3.7 Conclusion

This research discussed the development and administration of a 'Youth Population Survey' that measured OSY entrepreneurship perceptions, attitudes and activities, and was enhanced to evaluate outcomes of the UPLOAD JOBS program. This research determined that OSY entrepreneurship perceptions, attitudes and activities differed between OSY who selected for training and those that were not selected or associated to the training program at all, suggesting that the UPLOAD JOBS screening process was successful at differentiating OSY with entrepreneurship 'potential' from the broader population for program entry. Moreover,

determined that the UPLOAD JOBS program was successful at supporting OSY start up new businesses; however, fell short on fostering their positive perceptions and attitudes towards entrepreneurship. Results suggest that programs need to focus on fostering a more positive culture of entrepreneurship to encourage more sustainable entrepreneurship behaviors and activities amongst OSY in Mindanao, Philippines. Nevertheless, measuring and evaluating program outcomes is complex in a developing country context (i.e., data collection, pre-test post-test data issue, socio-cultural implications). Additional empirical datasets and analyses are required to advance youth entrepreneurship research and the management of OSY and entrepreneurship-training program outcomes in Mindanao, Philippines, respectively.

CHAPTER 4. Determinants of out-of-school youth employment (including self-employment): evidence from the UPLOAD JOBS program

4.1 Introduction

The international development literature has focused on understanding the social, economic, and institutional determinants that influence youth participation in the formal labor market (O'Higgins, 2003; Naafs, 2013; Jayawarna *et al.,* 2014). However, given the global policy debate and concern, the majority of these empirical studies have focused on youth unemployment (Mjema, 1997; Isengard, 2003; Dimitrov, 2012). Results from these and other empirical studies were unanimous that social, economic and institutional determinants of youth are significant and context-specific when it comes to youth unemployment (Mjema, 1997; Isengard, 2003; O'Higgins, 2003; Dimitrov, 2012; Naafs, 2013; Jayawarna *et al.,* 2014). To date, a notable gap in the international development literature exists about the significant determinants that influence youth engagement *in* the formal labor market. Given the millions of dollars invested by international development and donor agencies to support developing countries (Svensson 2003, Bourguignon and Sunberg 2007) foster youth integration *into* the formal labor market (UNDP, 2004; Awogbenle and Iwuamadi, 2010; UNDP, 2014; Cho and Honorati, 2014; USAID, 2015), identifying and assessing the significant social, economic, and institutional determinants of youth *employment (including self-employment)* is imperative. Especially in developing countries that are politically unstable and have differing socio-cultural and economic contexts (Muriithi and Crawford, 2003; DeJaeghere and Baxter, 2014), international development programs require significant and context-specific information to support the strategic management and performance outcomes of existing efforts (Chigunta *et al*., 2005; Easterly, 2009; Wilson *et al*., 2009; Awogbenle and Iwuamadi, 2010; Cho and Honorati, 2013; Gwija *et al*., 2014; DeJaeghere and Baxter, 2014). This research applied Sen's capabilities approach (1999, 2011) to identify and assess the significant determinants that influenced OSY employment (including self-employment) probabilities that participated in the UPLOAD JOBS program to support future program management in Mindanao, Philippines.

4.2 Theoretical background

4.2.1 Capabilities approach

In the international development strand of the social science and human development literature, Amartya Sen's (1999, 2011) capabilities approach (CA) provides a framework to evaluate individual behavioral outcomes (or decision to pursue a new activity) based on one's social, economic and institutional determinants: individual resources or assets (*what they have*), abilities (*what they are able to do*) and cultural context (*what society values*) (Sen, 1999; Gries and Naudé, 2011). The CA is based on the assumption that an individual will not pursue a specific activity or outcome unless they want to and additionally has the means and/ or resources to do so (Gries and Naudé, 2011; DeJaeghere and Baxter, 2014). The CA goes beyond standard economic metrics (i.e., growth in GDP per capita) to better understand why and how certain populations are more progressive than others (UNDP, 1990; Alkire, 2005; Gries and Naudé, 2011). Sen's CA has been most commonly applied in the context of human development and welfare to better understand determinants related to poverty reduction (Alkire, 2005), gender inequality (Robeyns, 2003), social justice (Nussbaum, 2003), education (Saito, 2003) and entrepreneurship (Gries and Naudé, 2011).

Youth and the capabilities approach

The capabilities approach has been applied to the context of youth to conceptualize and collect information about what and how social, economic and institutional determinants shape youth behaviors or outcomes. For example, Whitaker and Savage (2014) applied a capabilities approach to better understand the determinants of teen dating violence in the United States. Results from their study identified 14 social, economic and institutional determinants (life and physical health, love and care, mental wellbeing, bodily integrity and safety, social relations, participation, education, freedom from economic and non-economic exploitation, shelter and environment, leisure activities, respect, time-autonomy, mobility, and religion and identity) believed to influence teen dating violence. Selvam (2008) used a CA to qualitatively examine National Youth Policies in Kenya, Tanzania, and Uganda in order to shed light on youth

capabilities in the African context. Lindsay and McQuaid (2010) introduced the CA as a framework to collect labor market information of youth employment and unemployment in the United Kingdom. Results from their study found that a CA adds value to collecting labor market information because it goes beyond standard employment debates. DeJaeghere and Baxter (2014) developed a 'Youth Capabilities Model' to identify context specific determinants of youth 'functionings' or livelihood outcomes that participated in a youth entrepreneurship-education program in sub-Saharan Africa. Results from their study informed the importance of using a CA to illuminate the determinants that mediate youth livelihood decision-making and outcomes to enhance program design and management. While CA has been applied in different study contexts to investigate different behavioral outcomes related to youth, its application has been predominantly qualitative. To date, it has not been applied to measure and assess context-specific determinants of OSY in Mindanao, Philippines, to estimate their employment (including self-employment) probabilities.

4.3 Methods

4.3.1 Identifying determinants of OSY employment (including self-employment) in Mindanao, Philippines (Explanatory variables)

This research referred to the extant development literature using a CA to identify a meaningful set of determinants that might influence OSY employment (including self-employment) in Mindanao, Philippines. These determinants were then cross-referenced with OSY resources and assets, abilities and institutional context measured in a 'Youth Potential Entrepreneur' (YPE) questionnaire that was administered to OSY prior to program implementation.

Resources and assets

Individual resources and assets (financial, social and physical) are important drivers or resources that enable, but do not in and of themselves guarantee that a youth will pursue a specific livelihood opportunity (DeJaeghere and Baxter, 2014; Schøtt *et al*., 2015). Parents or other family members that are business owners represent positive physical and social capital for the next generation in the form of available employment opportunities, active role models, and

access to relevant resources and new market information for employment (Reynolds *et al*., 2005; Athayde, 2009; Dimitrov, 2012; Geldhof *et al*., 2014). As it relates to the Filipino culture, family is the primary source of advice, information and trust when it comes to starting a new business or pursuing a new income generating venture (Co and Mitchell, 2001; Chu *et al*., 2002). This research introduced OSY family business ownership that was measured in the YPE questionnaire as a potential determinant of OSY employment (including self-employment) in Mindanao, Philippines.

Individual abilities

One's *abilities* refer to an individual's personal skills or abilities that they can utilize or employ to achieve or pursue certain livelihood opportunities (DeJaeghere and Baxter, 2014). Based on the extant behavioral, management and occupational literature in the field of psychology, personality traits have been identified as determinants or antecedents of individuals' proactive behavior (Crant, 2000). A relationship described as a 'psychological process resulting in the interaction between an individual and the environment' (Latham and Pinder, 2005: 486). As it relates to empirical studies regarding formal labor market participation, personality traits have been used to measure, differentiate, and assess individual's choice of employment (Schmitt *et al*., 2003), motivation to pursue a job (Kanfer *et al*., 2001), job satisfaction and performance (Day *et al*., 2002), and employment outcomes (Crant, 2000). To date, personality traits have not been tested as abilities of OSY employment in Mindanao, Philippines. This research introduced the personality traits of autonomy (belief that one has control over the future of their life (McClelland, 1961)), innovativeness (creative and resourceful (Schumpeter, 1965)), and risk-taking (personal willingness to accept and commit to assuming risk no matter the cost (Kogan and Wallach, 1964)) that were measured in the YPE questionnaire, as potential determinants of OSY employment (including self-employment) in Mindanao, Philippines. These three personality traits that have been recognized as productive traits that enable individuals to exploit and seize new opportunities in resource-constrained environments (Shane, 2003; Rauch and Frese, 2007),

Institutional context

Institutional context refers to the structures of constraint (i.e., regulatory, social norms) that mediate one's decision-making and outcomes (DeJaeghere and Baxter, 2014; Schøtt *et al*.,

2015). In the extant development literature, gender has been frequently recognized for influencing youth labor market participation (Mjema, 1997; Isengard, 2003; O'Higgins, 2003; Msigwa and Kipesha, 2013; Naafs, 2013) due to social and cultural implications (Jamali, 2009). Based on these literature findings, females have been found to be less likely to be employed compared to males due to different styles of decision-making (Baker and Nelson, 2005), opportunity recognition (Eckhardt and Shane, 2003), self-perception (Anna *et al*., 2000), and constraints to household activities (Chigunta *et al*., 2005; Briones, 2009). Gender was measured in the YPE questionnaire and selected as a potential determinant of OSY employment (including self-employment) in Mindanao, Philippines.

4.3.2 OSY employment (including self-employment) status after the UPLOAD JOBS program (Dependent variable)

In order to determine OSY employment (including self-employment) status after participating in the UPLOAD JOBS program, the SCC project team administered a phone survey between February 2014 and May 2015. Local program staff contacted OSY via their listed mobile numbers extracted from program profile forms completed by OSY prior to program participation. This approach for communication and contact (i.e., phone survey) was preferred over other methods for convenience and efficiency of time and resources. In this phone survey, respondents were asked to elaborate about their current employment status (i.e., participation in the labor market). Respondent's raw answers were then recorded and documented in an excel file with the following coding: 'No, I am not employed' (including self-employment) coded as 0, and 'Yes, I am employed' (including self-employment) coded as 1. Unless the respective OSY was reached, OSY were contacted at least three times across a period of 14 days before they were considered a 'missing' case.

4.3.3 Assessing determinants of OSY employment (including self-employment) probabilities after participating in the UPLOAD JOBS program

To identify and assess the significant determinants that influenced OSY employment (including self-employment) probabilities after participating in the UPLOAD JOBS program, a logit regression was applied. A logit regression was used because of its ability to: 1) evaluate a binary

response variable; 2) assess multiple categorical determinants as it relates to a single binary response variable; and 3) determine the degree and relationship (positive or negative) that each variable has on the response variable (Hosmer and Lemeshow, 2010). A summary of the dependent (Dep) and explanatory (Exp) variables, measured in the YPE questionnaire, including units of measurement, predicted direction of influence and publication sources for selected determinants are listed in Table 4.1.

Table 4.1 Summary of variables considered for the logit regression model to estimate OSY employment (including self-employment) probabilities in Mindanao, Philippines, including units of measurement, predicted direction of influence and publication sources.

	Variable	*Definition*	Unit	*Predicted direction of influence*	*Source*
Dep (Y)		Employment Status (including self-employment)	0 Unemployed/ 1 (Self-) Employed		
Exp (X_i)	β_1 FAMILY BUSINESS	Family owns a business	0 No/ 1 Yes	+	Chu *et al*., 2002; Co and Mitchell, 2001; Reynolds *et al*., 2005; Athayde, 2009; Dimitrov, 2012; Geldhof *et al*., 2014
	β_2 PERSONALITY	I have control over the future of my life	1 Strongly Disagree -> 5 Strongly Agree	+	*Autonomy*: McClelland, 1961; *Innovative*: Schumpeter, 1965; *Risk-Taking*: Kogan and Wallach, 1964; *Personality traits*: Crant, 2000; Shane, 2003; Latham and Pinder, 2005; Rauch and Frese, 2007
	β_3 PERSONALITY	I am constantly looking for the next challenge in my life	1 Strongly Disagree -> 5 Strongly Agree	+	
	β_4 PERSONALITY	I am a risk-taker	1 Strongly Disagree -> 5 Strongly Agree	+	
	β_5 GENDER		0 Male/ 1 Female	−	Eckhardt and Shane, 2003; Baker and Nelson, 2005; Chigunta *et al*., 2005; Briones, 2009

Logit model equation:

$$Y_i = \beta_0 + \beta_1 FAMILYBUSINESS_i + \beta_2 PERSONALITY_i + \beta_3 PERSONALITY_i + \beta_4 PERSONALITY_i + \beta_5 GENDER_i + \varepsilon_i$$

Resources and assets

OSY family business ownership was measured as a binary categorical variable (0 No/ 1 Yes) where the following hypothesis was tested:

H1 OSY family business ownership represents a significant positive determinant to estimate OSY employment (including self-employment) probabilities in Mindanao, Philippines.

Abilities

Personality traits of autonomy, innovativeness, and risk-taking propensity were each measured by three items in the YPE questionnaire. These measurement items were selected based on theoretical and empirical foundations in the extant entrepreneurship literature and adapted to support OSY context and comprehension in Mindanao, Philippines (*See Section 2.3.3 'Finalizing the questionnaire'*). A CFA (Schreiber *et al*., 2006; Schumaker and Lomax, 2010) was used to inform how adapted personality items would be introduced into the logit equation. A total of 285 YPE questionnaires, administered prior to program implementation between September 2013 and August 2014, were considered for each personality traits' CFA. Table 4.2 summarizes the internal reliability of each personality trait. Data were analyzed using SPSS Statistical Version 23. The Cronbach's alpha value of each personality trait was below the reliability threshold of 0.7 indicating poor reliability (George and Mallery, 2003; Tavakol and Dennick 2011). Results suggest that measurement items could not be aggregated to represent a single score for each personality trait in the logit model.

Table 4.2 The internal reliability (Cronbach's alpha *(*α) of each personality trait measured in the YPE questionnaire (N = 285) determined using SPSS Statistical Version 23.

Personality trait	*Cronbach's alpha* (α)
Autonomy	0.54
Innovativeness	0.457
Risk-Taking Propensity	0.681

Given the poor reliability of each personality trait as a construct, one questionnaire item was selected from each personality construct. This ensured a diversity of personality items in the logit model while controlling the number of determinants being tested. Table 4.3 provides a summary of the standardized parameter estimates of each hypothesized measurement model. Data were analyzed using R Studio Software. Personality items were selected based on their factor loading (highest), R-square value (highest), and error variance (lowest) for each personality trait.

Table 4.3 Standardized parameter estimates (factor loading, r-square and error variance) of each personality trait and respective measurement items

Personality trait (or construct)	*Questionnaire Item*	*Factor Loading*	*R-Square (Reliability)*	*Error Variance*
Autonomy	I work hard to improve on my past performance	0.408*	0.166	0.834
	I prefer to be my own boss	0.488	0.238	0.762
	I have control over the future of my life	0.698	0.487	0.513
Innovativeness	I prefer to step outside of my comfort zone to explore and try new things	0.450*	0.203	0.797
	People get excited by my ideas	0.433	0.187	0.813
	I am constantly looking for the next challenge in my life	0.512	0.262	0.738
Risk-Taking Propensity	I am a risk-taker.	0.745*	0.555	0.445
	I often do whatever it takes to win	0.583	0.339	0.661
	When facing a challenging decision, I am more focused on what I will GAIN than lose	0.616	0.379	0.621

*Note: *indicates a parameter fixed at 1.0 in the original solution.*

Based on selected criteria, "I have control over the future of my life", "I am constantly looking for the next challenge in my life", and "I am a risk-taker" were selected to test the following hypotheses:

H2 "I have control over the future of my life", represents a significant positive determinant of OSY employment (including self-employment) probabilities in Mindanao, Philippines.

H3 "I am constantly looking for the next challenge in my life", represents a significant positive determinant of OSY employment (including self-employment) probabilities in Mindanao, Philippines.

H4 "I am a risk-taker", represents a significant positive determinant of OSY employment (including self-employment) probabilities in Mindanao, Philippines.

Institutional context

Gender was measured as a categorical variable (0 Male/ 1 Female) in the YPE questionnaire, where the following hypothesis was tested:

H5 OSY female gender represents a significant negative determinant of OSY employment (including self-employment) probabilities in Mindanao, Philippines.

4.3.4 Data analysis

In order to identify the critical determinants of OSY employment (including self-employment), data analysis focused on OSY that participated in the phone survey and were *unemployed* (unemployed and not self- employed) at the onset of training. Data were analyzed using SPSS Version 23.

4.4 Results

4.4.1 Sample selection

A total of 130 OSY participated in the UPLOAD JOBS program; however, only 79 participated in the phone survey six-months after training (N = 79, 51 missing). There were a high number of missing cases due, but not limited to, out-of-service mobile numbers after training (no alternative contact information for OSY), lack of OSY interest in participation, and limited funding to support more persistent follow ups. Based on the OSY that were unemployed at the onset of training (N = 74), only 53 OSY participated in the phone survey (N = 53, 21 missing). For the purpose of this research, missing cases (21) were removed from analyses. Table 4.4 provides a

summary of OSY demographics and socio-economic information that participated in the phone survey after training.

Table 4.4 Demographic and socio-economic profiles of out-of-school youth (OSY) in Mindanao, Philippines that were unemployed (and not self-employed) at the onset of training and participated in the phone survey (N = 53, 21 missing) between February 2014 and October 2015. Data were collected from a questionnaire that was administered prior to program implementation.

Demographics (N = 53, 21 missing)	*Frequency (Percent)*	*Mean*
Gender (*female*)	21 (39.6%)	
Age (*years*)		20
Education (*High school diploma*)	52 (98.1%)	
Religion (*Christian*)	45 (86.5%)	
Head of household	6 (11.3%)	
Resides in their village for over 10 years	9 (17%)	
Family owns their own farm	20 (37.7%)	
Participated in a NGO or government training in the past year	19 (35.8%)	
Individual annual income		25,492.45 PhP* (587.78 USD)

*Note: *0.023057 Average rate PhP/USD for 2013 – 2014 (Source: http://www.usforex.com)*

OSY that participated in the phone survey and were unemployed (and not self-employed) at the onset of training represented an average age of 20, were predominantly male (60.4%), had a high school diploma (98.1%), of the Christian religion (86.5%), and hosted an average annual income of 25,492.45 PhP (587.78 USD) or 1.61 USD/ day, above the United Nations Millennium Development Goals indicator of 1.25 USD/day (UNSD, 2008). Only six (11.3%) OSY represented the head of household, suggesting that the remainder resided at home with their parents. In addition, only 37.7% of OSY indicated having a family with their own farm suggesting a more urban population in this agricultural region of Mindanao. Approximately 36% indicated having participated in an NGO or government related development program in the past year. OSY demographics and socio-economic profiles that were unemployed at the onset of training and participated in the phone survey were fairly similar to that of the broader OSY

population collected in Chapter 2 (Measuring youth entrepreneurship attributes: developing a questionnaire for the UPLOAD JOBS program) in terms of gender, education levels, religion, head of household status, and family farm ownership (Table 2.5). On the other hand, OSY's average annual incomes were approximately 176.51 USD more (587.78 USD) per year than Chapter 2's OSY who had an average annual income of 411.27 USD. Nevertheless, OSY annual incomes were not included in this model. While individual financial capital is suggested to be a significant determinant of youth labor market participation (Schøtt *et al*., 2015), the majority of OSY made approximately below or slightly above 1.25 USD/day (the United Nations Millennium Development Goals indicator of poverty, (UNSD, 2008)), suggesting that OSY in this case study are of similar socio-economic status and backgrounds (Jayawarna *et al*., 2014). Therefore, individual incomes were not considered a critical determinant for this model.

Of particular interest in the demographics and socio-economic profiles of OSY is the high number of non-residents (83%) in this population. In this research, non-residents were defined as individuals that had resided in their current barangay for *less than 10 years*. Findings of 'The embedded entrepreneur' assumed that individuals who have resided in their place of residence for an extended period of time are more likely to be committed, resourceful, and understand the inherent social norms and practices of the region, thus having greater social capital in pursuing an entrepreneurship venture than an individual who is mobile or new to the region. On the other hand, Constant and Zimmerman (2004) determined that immigrants living with foreign passports in Germany were more likely to be in entrepreneurs than native Germans, where their earnings as entrepreneurs increased with their exposure to Germany, hours worked, and occupational prestige. When no alternatives exist, OSY are willing to leave their barangay (also known as village) to find employment or an alternative source of income generation to support their families both locally and globally (Vignoles, 2008; HED, 2011). Resident status has not been used to assess OSY employment (including self-employment) in Mindanao, Philippines. In addition, has not been explicitly measured by the Philippines Statistics Authority. Adjusting the previous theoretical logit model, a second model introduced a sixth determinant, OSY resident status, to account for OSY context and mobility in the region. In the YPE questionnaire, OSY self-reported responses of their years of residence in their current barangay were coded as 0 for 'Non-resident: Less than 10 years' and 1 for 'Resident: Over 10 years'. Residential status

referred to in this model as 'Resident' was identified as a positive determinant to estimate OSY employment (including self-employment) probabilities in Mindanao, Philippines (H6):

H6 OSY resident status represents a significant positive determinant of OSY employment (including self-employment) in Mindanao, Philippines.

Logit model equation adjusted to the OSY sample population:

$$Y_i = \beta_0 + \beta_1 FAMILYBUSINESSi + \beta_2 PERSONALITY_i + \beta_3 PERSONALITY_i + \beta_4 PERSONALITY_i + \beta_5 GENDER_i + \beta_6 RESIDENT_i + \varepsilon_i$$

4.4.2 Logit model equation based on theory

Collinearity

Table 4.5 illustrates the collinearity statistics (tolerance, variance inflation factor) for each independent variable as a check for multicollinearity. All tolerance and variance inflation factor values were acceptable suggesting no multicollinearity among the explanatory variables.

Table 4.5 Collinearity statistics (tolerance and variance inflation factor) of the six explanatory variables used to estimate OSY employment (including self-employment) probabilities that participated in the UPLOAD JOBS program in Mindanao, Philippines. Data were collected from the questionnaire administered prior to program implementation and analyzed using SPSS Version 23.

N = 53	*Tolerance*	*Variance Inflation Factor*
Family owns their own business	0.975	1.026
I have control over the future of my life	0.812	1.232
I am constantly looking for the next challenge in my life	0.880	1.136
I am a risk-taker	0.897	1.115
Gender (Female)	0.849	1.177

Model Assessment

Results of the theoretical logit regression are shown in Table 4.6. The Hosmer and Lemeshow goodness of fit test yielded a x^2 (df = 7) of 4.056 and was insignificant (p>0.5), suggesting that the model was fit to the data well. Additional descriptive measures of goodness-of-fit are the R^2 indices, defined in this analysis by Cox and Snell (1989) and Nagelkerke (1991) that explained 12.8% and 18.6% of the variance in OSY employment probabilities, respectively. The model correctly classified 79.2% of cases, compared to the null model at 73.6%. 'I am a risk-taker' was determined to be significant at the 5% level. Its estimated coefficient suggested that every unit increase in OSY's reported response to the item, "I am a risk-taker", increased the probability that OSY would be employed after training.

Table 4.6 Logit regression analysis of determinants selected based on theory to estimate OSY's employment (including self-employment) probabilities (N = 53) that participated in the UPLOAD JOBS program in Mindanao, Philippines. Data were analyzed using SPSS Version 23.

Explanatory Variables	*β*	*S.E.*	*df*	*Sig.*	e^{β}
Family owns their own business	-0.836	0.974	1	0.391	0.433
I have control over the future of my life	0.325	0.51	1	0.524	1.384
I am constantly looking for the next challenge in my life	0.132	0.578	1	0.82	1.141
I am a risk-taker	1.272	0.651	1	0.051**	3.568
Gender (Female)	0.045	0.753	1	0.953	1.046
Constant	-4.801	3.108	1	0.122	0.008

**p< 0.10; **p<0.05*

Goodness-of-fit (Hosmer & Lemeshow): 4.056 (df = 7), p = 0.773; Cox & Snell R^2 = 0.128; Nagelkerke R^2 = 0.186; Overall percentage correct: 79.2%

4.4.3 Logit model equation adjusted to the youth context

Collinearity

Table 4.7 illustrates the collinearity statistics (tolerance, variance inflation factor) for each explanatory variable as a check for multicollinearity. All tolerance and variance inflation factor values were acceptable suggesting no multicollinearity among the explanatory variables.

Table 4.7 Collinearity statistics (tolerance and variance inflation factor) of the six explanatory variables used to estimate OSY employment (including self-employment) probabilities that participated in the UPLOAD JOBS program in Mindanao, Philippines. Data were collected from the questionnaire administered prior to program implementation and analyzed using SPSS Statistical Version 23.

N = 53	*Tolerance*	*Variance Inflation Factor*
Family owns their own business	0.943	1.060
I have control over the future of my life	0.822	1.216
I am constantly looking for the next challenge in my life	0.763	1.310
I am a risk-taker	0.851	1.175
Gender (Female)	0.814	1.229
Resident	0.827	1.209

Model assessment

Results of the adjusted model's logit regression are shown in Table 4.8. The Hosmer and Lemeshow goodness of fit test yielded a x^2 (df = 8) of 12.268 and was insignificant (p>0.5), suggesting that the model fit the data well. Based on the Cox and Snell (1989) and Nagelkerke (1991) R^2 values, the adjusted model explained 24.6% and 35.8% of the variance in OSY employment (including self-employment) probabilities, respectively. Furthermore, the model correctly classified 82.7% of cases, compared to the null model at 73.1%. In this logit model, "I am a risk-taker" was significant at the 5% level. The estimated coefficient suggested that every unit increase in OSY's self-reported response to the item, "I am a risk-taker", increased the probability that OSY would be employed (including self-employment) after training. In addition,

OSY family business ownership was significant at the 10% level. The negative estimated coefficient suggested that the increased likelihood that OSY come from families who own business decreased the probability that OSY would be employed (including self-employment) after training.

Table 4.8 Adjusted logit regression analysis of OSY's employment (including self-employment) probabilities (N = 53) that participated in the UPLOAD JOBS program in Mindanao, Philippines. Data were analyzed using SPSS Version 23.

Explanatory Variables	β	*S.E.*	*df*	*Sig.*	e^{β}
Family owns their own business	-2.215	1.219	1	0.069*	0.109
I have control over the future of my life	0.399	0.541	1	0.461	1.490
I am constantly looking for the next challenge in my life	-0.485	0.726	1	0.505	0.616
I am a risk-taker	2.003	0.881	1	0.023**	7.408
Gender (Female)	0.602	0.846	1	0.472	1.825
Resident	-1.505	0.952	1	0.114	10.785
Constant	-5.037	3.983	1	0.206	0.006

**p< 0.10; **p<0.05*
Goodness-of-fit (Hosmer & Lemeshow): 12.268 (df = 6), p = 0.092; Cox & Snell R^2 = 0.246; Nagelkerke R^2 = 0.358; Overall percentage correct: 82.7%

4.5 Discussion

The theoretical and adjusted logit models of OSY employment (including self- employment) fit to the data well. In both logit models, "I am a risk-taker" was identified to be a significant determinant of OSY employment (including self-employment). According to Hofstede's (1980) cultural dimensions, the Philippines population represents a collectivistic culture (i.e., interdependent, behaves in a communal way with rules and norms, does not engage in risk behavior) (Grimm *et al*., 1999; Triandis and Suh, 2002). Therefore, results suggested that the OSY psychological ability of being a risk-taker is a critical determinant and represents a transferable personality trait from theoretical and empirical literature, to estimate OSY employment (including self- employment) in Mindanao, Philippines. OSY family business ownership was identified as a negative determinant in both the theoretical and adjusted logit

models, but only found to be significant in the adjusted logit model at the 10% level. The negative relationship of OSY family business ownership suggests a misspecification in the model. Adjusting the logit model to include the explanatory variable of 'Resident' status to estimate OSY employment (including self-employment) probabilities in Mindanao, Philippines, may have helped strengthen existing relationships (i.e., higher predictive capacity) in the model; however, empirical studies acknowledge that little is known about youth employment, particularly as it relates to their human and associated social capital factors that influence their engagement in the formal labor market (Mungai and Velamuri, 2011; Jayawarna *et al*., 2014), to confirm adjusted model results.

4.5.1 Empirical limitations

Data collection of OSY employment (including self-employment) determinants was the first of this type of measurement in this region of Mindanao, Philippines. Education is considered a social determinant to assess youth employment (including self-employment) (Mjema, 1997; Isengard, 2003; Dimitrov, 2012) was excluded from this research's analyses. Local program staff advertised the training program to be for high school graduates only, under the assumption that high school graduates would have greater success in the program due to their higher levels of education and subsequent comprehension of training program topics. As a result, the sample was biased towards high school graduates (98.1%). Furthermore, religion, considered a cultural or institutional determinant of individual behavior (Dana, 2009) was excluded from analyses. Due to security limitations (i.e., active conflict) during the time of data collection, local program staff prioritized participants of the Christian religion resulting in a biased sample towards Christians (86.5%).

This research modified Sen's CA by assessing OSY employment (including self-employment) probabilities by utilizing psychological abilities of OSY personality traits. The logit analysis tested three personality measurement items. Future studies can focus on developing statistical methodologies for selecting personality traits and measurement items to represent these traits. This will likely improve statistical reliability of selected items to represent each personality construct. While this research used a confirmatory factor analysis to provide criteria to select measurement items for analyses, future studies can consider other methodological approaches for

selecting and reducing measurement items (i.e., *t*-test, Cronbach's alpha reduction of redundant items) to support a logit regression analysis of OSY employment (including self-employment).

While a dependent variable of OSY self-employment was desired, it was not achieved in this dissertation. Due to OSY mobility and the program's limited follow-up contact information beyond mobile numbers post-intervention, the sample size was smaller than desired for a logit regression analysis (Bewick *et al*., 2005). Therefore, data collection focused on OSY employment (including self-employment). In addition, the negative relationship of family business ownership to OSY employment (including self-employment) suggests a measurement artifact or model misspecification. Results rejected the hypothesis that family business ownership represented a positive capital resource for OSY employment (including self-employment) (Reynolds *et al*., 2005; Athayde, 2009; Dimitrov, 2012; Geldhof *et al*., 2014). On the other hand, occupational and development research has found that the role of family business ownership may go either way (positive or negative) in the case of youth, dependent on the parents' income (Ram *et al*., 2001) and success in employment (including self-employment) (Mungai and Velamuri, 2011; Jayawarna *et al*., 2014) that future research should consider in this context of OSY employment in Mindanao, Philippines. Additional empirical datasets and research are required to support and validate results from this research in Mindanao, Philippines, and this nascent topic of youth.

Determinants for this research were limited to data collected in the YPE questionnaire. Other socio-economic conditions, factors, characteristics and government policies also play a role in youth employment (including self-employment) (Gnyawali and Fogel, 1994; Schøtt *et al*., 2015); for example, Kanter (1989) provides multiple examples of other societal characteristics that influence individual engagement in employment (including self-employment) that reside in conflict regions of developing countries including war, international monetary crises and civil rights movements that were not included in this analysis. Future research is encouraged to include and test other determinants of OSY employment (including self-employment) in Mindanao, Philippines.

4.5.2 Future recommendations

Education programs are more frequently using social media as a cost effective way for teaching, learning and sharing with youth (Moran *et al*., 2011). Future empirical studies should consider using social media to communicate and follow-up with OSY post-intervention.

Recommendation 1: Program managers should use other communication platforms such as social media (i.e., Facebook, Instagram, Twitter, Snapchat) that are more cost-effective to communicate and follow-up with OSY post-program intervention.

Measurement tools and empirical assessments related to personality traits have advanced in empirical international research (Thomas and Mueller, 2000). Future studies should adopt a CA to further investigate OSY psychological abilities, specifically OSY risk-taking, and their role in estimating OSY employment (including self-employment) in Mindanao, Philippines.

Recommendation 2: Researchers should use a CA to assess other measurement items of the psychological ability of risk-taking as it relates to OSY employment (including self-employment) in Mindanao, Philippines.

OSY risk-taking and family business ownership were identified as significant determinants that influenced OSY employment (including self-employment) probabilities in Mindanao, Philippines. Results suggested that programs whose main objective is to foster OSY employment in Mindanao, Philippines, should manage the psychological and cultural implications of these determinants to support program performance outcomes. In addition, consider additional training approaches that consider the impacts of these determinants to help enable OSY employment in Mindanao, Philippines. On the other hand, results may be case-specific or represent a model misspecification that future empirical datasets and research must address. Future research on this topic should consider King and Zeng (2001) and Toms *et al*.'s (2003) methods for collecting data, statistical procedures and software used for analyzing 'rare' sample groups and events where results are often difficult to explain.

Recommendation 3: Additional research and empirical datasets are required to justify and validate OSY risk-taking and family business ownership as significant determinants of OSY) employment (including self-employment) in Mindanao, Philippines.

Recommendation 4: Based on case study results, programs should foster the psychological ability of risk-taking and parents of OSY who are unemployed to enable positive OSY employment probabilities after training in Mindanao, Philippines.

4.6 Conclusion

This study presents an approach to assess the determinants that influenced OSY employment (including self-employment) probabilities in Mindanao, Philippines, using a CA. Five determinants of OSY employment (family business ownership, 'I have control over the future of my life', 'I am constantly looking for the next challenge in my life', 'I am a risk-taker' and gender) were used to represent a theoretical logit model to represent OSY resources and assets, abilities and institutional context related to their employment (including self-employment) probabilities. Building on the previous theoretical logit model, a second model introduced a sixth determinant, OSY resident status, to account for OSY context and mobility in the study region of Mindanao, Philippines. Both of the logit regressions identified 'I am a risk-taker' as a positive significant determinant ($p<0.05$), while the logit regression adjusted to the sample population identified family business ownership as a negative significant determinant ($p<0.10$). Results suggest that OSY employment (including self-employment) is influenced by their psychological abilities and cultural determinants in Mindanao, Philippines, informing policy and programs that fostering youth into the formal labor market may be more complex in developing countries. However, additional research and empirical data are required to advance, validate and clarify research results, particularly the relationship between family business ownership and OSY employment (including self-employment) in Mindanao, Philippines.

CHAPTER 5. Conclusion

Global youth unemployment is on the rise again (ILO, 2016). It is a pivotal time for international development agencies implementing entrepreneurship-training programs to effectively foster youth entrepreneurs in developing countries. This dissertation provides information about how existing research, measurement tools and empirical assessments that have advanced the fields of behavioral psychology and entrepreneurship can be used to provide recommendations that support entrepreneurship-training program design, implementation and performance outcomes in Mindanao, Philippines. Applying the Global Entrepreneurship Monitor's research framework to the context of OSY in Mindanao, Philippines, illuminated serious drawbacks in youth research and the lack of tools to collect youth- and entrepreneurship specific information to advance existing research and entrepreneurship-training program design and management. Furthermore, that existing tools must be adapted to youth-context in order to effectively measure, assess and identify the critical information required to advance youth research, program management and performance outcomes in developing countries, respectively.

5.1 Dissertation Outcomes

This dissertation developed two measurement tools, a 'Youth Potential Entrepreneur' (YPE) questionnaire that informed the UPLOAD JOBS program about OSY to customize the program prior to implementation, and a 'Youth Population Survey' that measured and informed program outcomes. Each of these measurement tools was adapted to OSY context and comprehension to inform the critical information required to support the UPLOAD JOBS program design, management and performance outcomes in Mindanao, Philippines. Data collected from the YPE questionnaire suggested that OSY have psychological potential for entrepreneurship (i.e., positive entrepreneurship motivations, aspirations, and personality traits); however, OSY are necessity entrepreneurs that have minimal entrepreneurship knowledge and access to social, physical and financial resources to start a new business. The personality traits of autonomy, innovativeness and risk-taking propensity measured in the YPE questionnaire proved to be an effective measurement model to screen OSY entrepreneurship 'potential' for program entry, supporting program management of resources and performance outcomes. The 'Youth

Population Survey' provided information to the UPLOAD JOBS program that screening OSY from a broader population differentiated their entrepreneurship perceptions, attitudes and activities, and that the program to some extent was able to foster new entrepreneurs (i.e., business owners). However, the program fell short in promoting their positive perceptions and attitudes of entrepreneurship. Finally, it was determined that OSY employment (including self-employment) probabilities are significantly influenced by family background (i.e., family business ownership) and psychological determinants (i.e., 'I am a risk-taker').

Results from this dissertation inform policy makers that enabling OSY entrepreneurship and employment in Mindanao, Philippines is complex. To advance youth research and entrepreneurship-training program design and management, measuring and fostering psychological and cultural aspects related to OSY entrepreneurship and employment in developing countries must be a priority. However, measurement tools must be developed and adapted to collect the critical context- and entrepreneurship-specific information about OSY in Mindanao, Philippines. It is only until we understand OSY in their own environment, can we begin to effectively and strategically embark on a positive culture of entrepreneurship that supports OSY pro-active behaviors and engagement in the formal labor market beyond program support.

5.2 Lessons learned from the UPLOAD JOBS program

Based on conducting research to support this dissertation, there were a number of **common elements, practices, challenges and lessons learned** that existing and future researchers and program managers in developing countries should consider and be aware of:

Common elements in research **methodologies**:

- Use the extant entrepreneurship literature as background information; list research questions and testable hypotheses; select appropriate statistical procedures; and specify desired statistical confidence level and permissible sampling error in determining sample size; before development of the survey/ questionnaire development.

- Consideration measurement scales and/ or response formats used in the survey/ questionnaire to address language barriers in OSY self-reported responses.
- Review measurement items by experts, professionals and local program counterparts to help localize survey/questionnaire content.
- Use a translator to account for varying dialects of OSY.

Common practices identified for **data collection:**

- Obtain face-to-face permission and support from local barangay leaders prior to engagement in study areas.
- Provide refreshments (drink and food) for each engagement, survey administration, and data collection.
- Be aware and take into consideration national, local and religious holidays, times of day, and cultural practices.

Common challenges experienced:

- Uncertain security/ access of study area.
- Attaining representative samples (datasets) for analyses.
- Localize measurement items to inform OSY about the local context of entrepreneurship.
- Adapt statistically significant measurement items obtained from quantitative and statistical analyses to this cross-cultural context.

Lessons learned based on **data analyses**:

- Adapting measurement items to support youth context and comprehension is imperative.
- Personality traits of OSY autonomy, innovativeness and risk-taking propensity are measurable components of OSY entrepreneurship potential in Mindanao, Philippines.
- Administering a two-wave survey (i.e., T1 and T2) is not ideal to measure and evaluate program outcomes due to reduced sample size post-intervention.
- Cultural and psychological determinants play a significant role in estimating OSY employment (including self-employment) probabilities in Mindanao, Philippines.

- Utilizing social media (i.e., Facebook) is a more cost-effective and efficient approach to communicate and contact OSY post-program intervention.

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